THE COTTON GIN AND OIL MILL

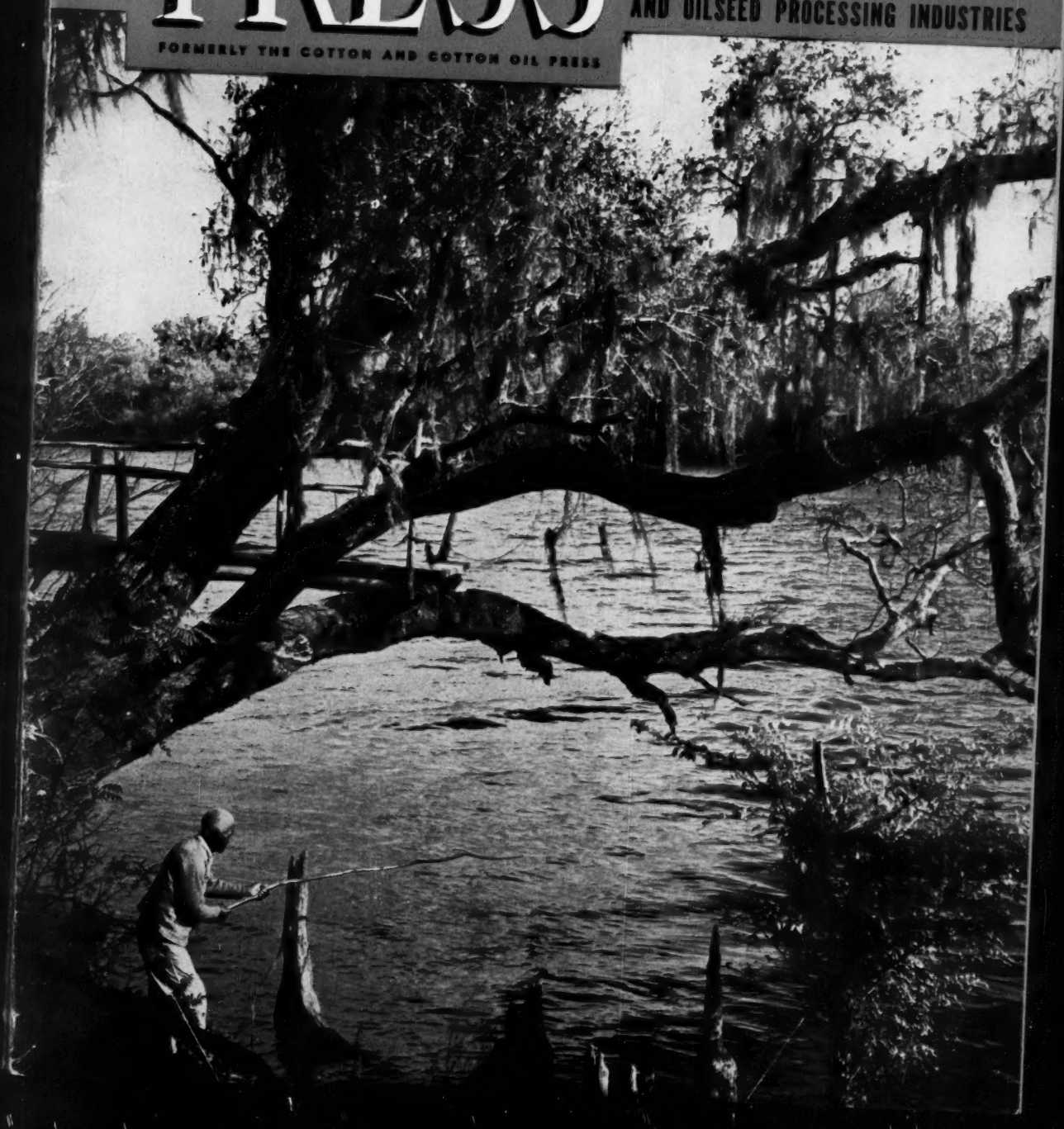
PRESS

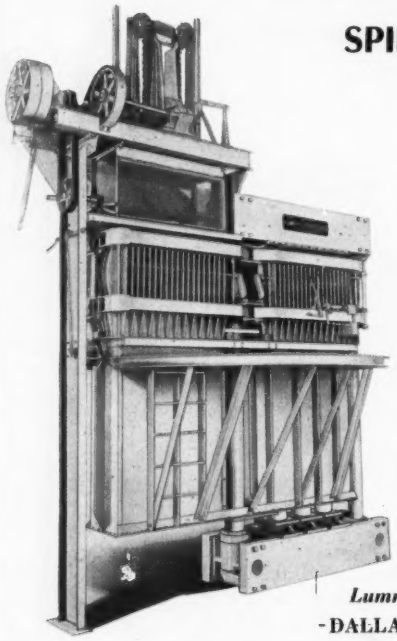
FORMERLY THE COTTON AND COTTON OIL PRESS

JUNE 9, 1951

52nd YEAR

THE MAGAZINE OF THE COTTON GINNING AND OILSEED PROCESSING INDUSTRIES





SPINNERS *Prefer* THE BALES

from the

LUMMUS STANDARD DENSITY COMPRESS

From the LUMMUS STANDARD DENSITY COMPRESS Spinners like small bales. They handle easily, they ship economically. A Standard Density bale from a Lummus Compress has the appearance that helps sell cotton.

Good samples—firm and dense—are easy to take from a Standard Density bale. And the bales open well in the mill.

These days of mechanized farming and crowded gin conditions, the Lummus Standard Density compress will help you serve your farmers and the mills better.

Let us tell you about it.

LUMMUS COTTON GIN COMPANY

Lummus is doing more to put gins on a better paying basis.

DALLAS, TEXAS COLUMBUS, GA. MEMPHIS, TENN.

Streamlined for Simplicity and Maximum Savings in Power Costs

CONTINENTAL SYSTEM GINNING OUTFIT

In many gin plants, more power is consumed by fans than all the other gin machinery combined. Continental System Ginning outfits save substantially on power costs because they do an A-1 drying, cleaning and ginning job with **fewer fans** than most other outfits.

Economical power use is only one of many outstanding and distinctive features which have won for Continental System Outfits the universal acclaim of ginners wherever cotton grows.

CONTINENTAL GIN COMPANY

BIRMINGHAM, ALABAMA

ATLANTA • *DALLAS* • *MEMPHIS*

Entered as second-class matter February 4, 1905, at the Post Office at Dallas, Texas, Under Act of Congress of March 3, 1897

Stop Insect Losses!
USE COTTON POISONS
The Right Way

Cotton Insect Control Pays Off!

Use recommended insecticides, but use them right to obtain the greatest benefits. Follow your local recommendations for timing, method and rate of application, and number of applications, to get the most for your insecticide dollar. Consult your county agent for detailed information for your locality.

Many cotton farmers have learned that toxaphene dusts and sprays are an economical and effective way to control insect pests. Toxaphene insecticides are recommended by leading cotton-growing states. They control not just one or two, but practically every insect pest which damages cotton. If you cannot get enough toxaphene insecticides, consult your local dealer or agricultural authorities on other recommended methods of controlling cotton insects. Send for free illustrated booklets, "Cotton Insects," "The Death of a Boll Weevil," and "More Profit Per Acre."

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943 King Street, Wilmington, Delaware

This advertisement is being seen by more than 1,000,000 readers of:

ACCO PRESS
PROGRESSIVE FARMER

TOXAPHENE dusts • sprays

THE CHEMICAL BASE FOR TOXAPHENE IS PRODUCED BY HERCULES FROM THE SOUTHERN PINE

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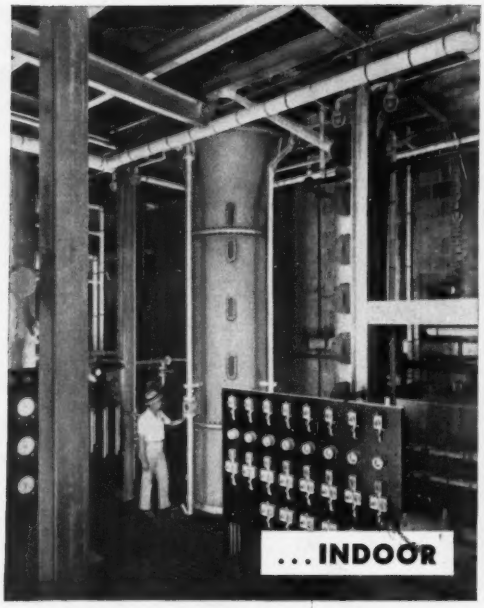
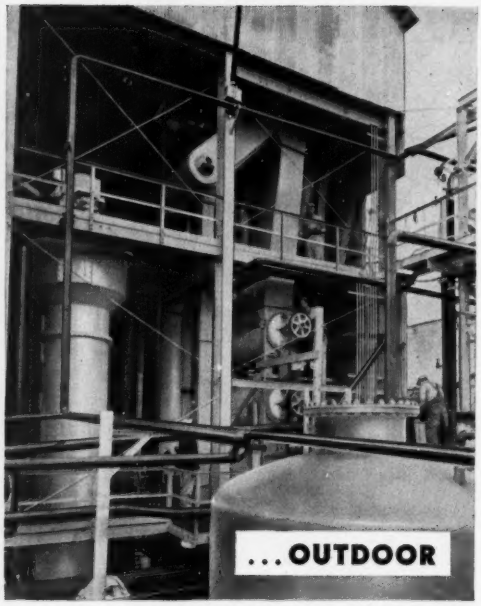


Soy bean oil extraction plant located in Tennessee



Rice bran oil extraction plant in Southern Texas

ALLIS-CHALMERS GIVES YOU

MONEY-SAVING Solvent Extraction Systems

WHEN YOU CALL on Allis-Chalmers for a continuous solvent extraction installation, you get a plant that's *individually designed* for your own particular application.

INDOOR OR OUTDOOR

Most climates call for a totally-enclosed installation . . . to protect workmen and machinery against snow and cold weather. Warmer climates permit the planning of an outdoor installation . . . with only a portion of the machinery being sheltered. Allis-Chalmers has designed and supervised the erection of continuous solvent extraction equipment for both indoor and outdoor plants.

PIONEERS IN THE FIELD

Recognized as a pioneer in the solvent extraction field, Allis-Chalmers was the *first* manufacturer in the nation to provide American-made equipment to American mills for the continuous solvent extraction of soybean, cottonseed, corn germ, and rice bran oils. With this experience, A-C has gained a merited position as an authority on solvent extraction equipment and techniques.

PAYS FOR ITSELF

It is an established fact that continuous solvent extraction equipment *pays for itself* in a few short years . . . by recovering 4 to 7 per cent *more* vegetable oil than can be obtained by screw press or hydraulic methods.

GET ILLUSTRATED BOOKLET

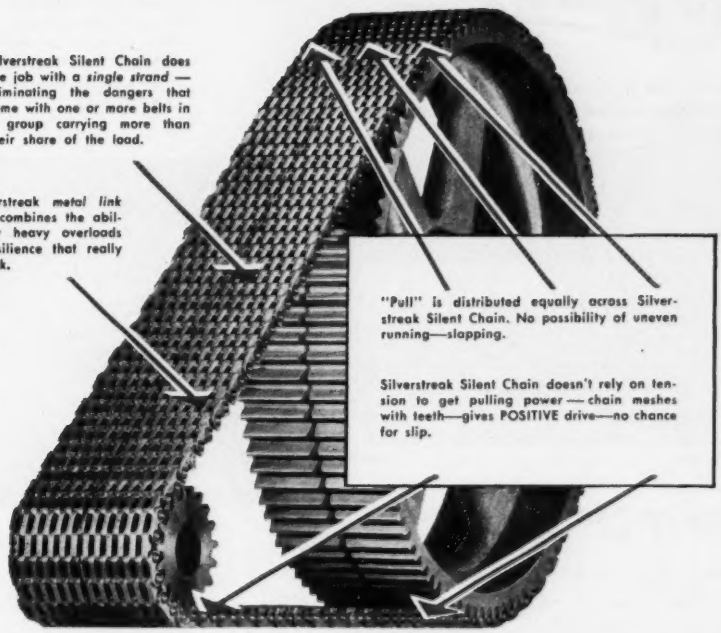
Contact your nearby Allis-Chalmers sales office for complete details. Ask for bulletin 13B6757, a fact-filled guide to money-saving solvent extraction systems. If more convenient, write direct to Allis-Chalmers, Milwaukee 1, Wis.

A-3257

ALLIS-CHALMERS

Pioneers in the Field of Continuous Solvent Extraction

SLIP-PROOF
SLAP-PROOF
SHOCK-PROOF


Silverstreak Silent Chain does the job with a *single strand* — eliminating the dangers that come with one or more belts in a group carrying more than their share of the load.
Husky Silverstreak *metal link* construction combines the ability to carry heavy overloads with the resilience that really absorbs shock.
"Pull" is distributed equally across Silverstreak Silent Chain. No possibility of uneven running—slapping.
Silverstreak Silent Chain doesn't rely on tension to get pulling power — chain meshes with teeth—gives POSITIVE drive—no chance for slip.

Get Full RPM Transmission With LINK-BELT Silverstreak Silent Chain Drives

Yes, get the amazing, trouble-free efficiency of 98.2%. A standard of operation that continues throughout the long, long life of the drive. More than this — every rating and design is backed by a record of *proven performance*. And every chain is engineered for the job. You conserve space, too — for Link-Belt Silverstreak Silent Chain Drives operate efficiently on short centers. Ratios as high as 10 to 1 are commonly used.

Little wonder, then, that so many concerns to whom top operation efficiency and rugged dependability are a must, standardize with Link-Belt Silverstreak Silent Chain Drives.

LINK-BELT COMPANY Atlanta, Dallas 1, New Orleans 12, St. Louis 1, Charlotte 2, N. C., Baltimore 18, Birmingham 3, Houston 1, Jacksonville 2. Distributors Throughout the South.

12,206-C

LINK-BELT

SILVERSTREAK SILENT CHAIN DRIVES

Cotton "Mobilization"

is your job

Helping the national defense in one way or another is everybody's job. Maintaining maximum production and high-quality lint sample is the cotton ginner's job . . . because today's needs are greater, uses are wider, and standards are higher as military demands pile in on top of civilian requirements. Medical and surgical supplies, webbings, beltings, filters, and clothing are just a few of the items which call for top-grade cotton in larger quantity than ever.

Total estimated demand for U. S. cotton in 1951 is 15 million bales

How can you help? By keeping your machines on the job through a sound maintenance program.

You're the Doctor!

REREAD YOUR OPERATOR'S INSTRUCTION BOOK

Keep dust and lint out of the engine.

Use only recommended lubricants and oil filters; and change both at recommended intervals.

Keep cooling system efficient — follow instructions for preventing scale and rust.

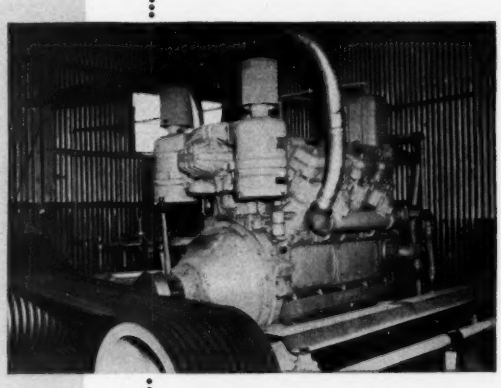
Keep fuel system clean — change fuel filter elements as required; prevent dirt from entering when filling tank.

Keep air cleaner free of excess lint, dust and dirt.

Anticipate future parts needs. Have your "Caterpillar" dealer rework worn pistons, liners, crankshaft, cylinder head, etc., for many extra hours of good performance life.

CATERPILLAR, PEORIA, ILLINOIS

Steady production here—4 to 5 bales an hour are processed through this 4/80 Murray gin powered by its "Caterpillar" Diesel D375 Cotton Gin Engine (below). "Performance fine; power cost low," says owner of the Ebony (Arkansas) Gin Company.



CATERPILLAR

COTTON GIN ENGINES

ARKANSAS

J. A. RIGGS TRACTOR COMPANY
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McGhee . . . West Memphis

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YANCEY BROS. CO.
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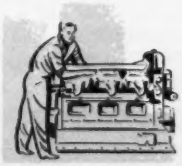
GENUINE "CATERPILLAR" PARTS...

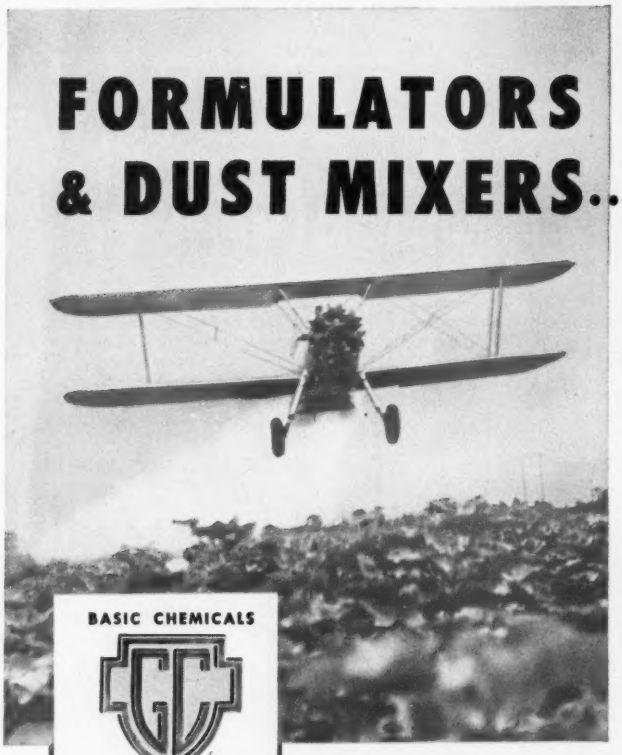
When you deal with your "Caterpillar" Dealer you can count on genuine replacement parts — the very same parts that have made "Caterpillar" engines famous for 20,000, 30,000 and more hours of duty. No parts can replace "Caterpillar" for quality!



TIME-SAVING EXPERT SERVICE...

When minutes mean money — that's the time service by your "Caterpillar" Dealer pays off! His men are factory trained, methods are exact — special, precision tools speed up the job—that's backed by his guarantee. And service keeps pace with your engine 'round the clock!

FORMULATORS & DUST MIXERS...



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GC

FOR AGRICULTURE

When you specify "General Chemical," you get the best in basic toxicants for dust mixes and spray concentrates. And you buy from a single, dependable source, with a background of sound research and production experience spanning four decades.

Such a combination is important in all your operations: purchasing, formulating and processing. It means you will be using materials that are trouble-free . . . in your equipment and in the fields. So be sure of your source—specify "General Chemical"!

For Year-in, Year-out Dependability

Specify "GENERAL CHEMICAL"

DDT Technical and Dust Base

BHC Technical and Dust Base

CALCIUM ARSENATE
Standard & Low Lime

PARATHION Dust Base

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Technical and Dust Base

NICOTINE Sulfate & Alkaloid

COTTON DEFOLIANT
(Potassium Cyanate)

Makers of Orchard* Brand Insecticides and Fungicides

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ALLIED CHEMICAL & DYE CORPORATION
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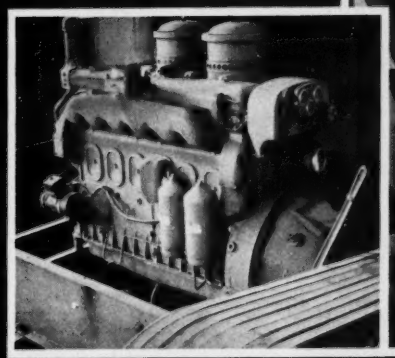
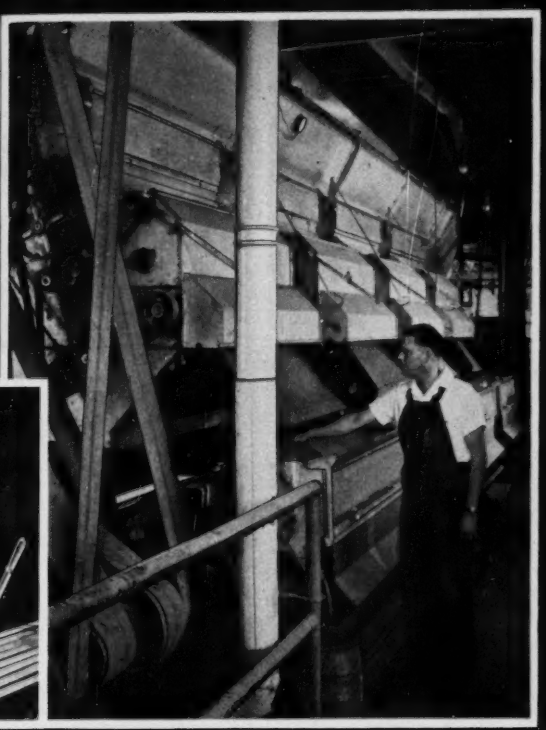
DDT Spray Powders and Emulsion
DDD Dust Base and Wettable Powder
Paris Green
BHC Spray Powders and Emulsion
Micro-Dritomic* Sulfur—Sulfur Fungicide
Spraycop*—Copper Fungicide
"Puratized"—Mercury Fungicide
Ziram—Organic Fungicide

*Reg. U. S. Pat. Off.

COSTS LESS

and sticks to the job!





THAT'S the way the folks at Omega Gin, Omega, Georgia, describe the GM Diesel engine driving their 4-stand gin.

At full tilt, 16 hours a day, this 6-cylinder unit uses only 6 gallons of fuel an hour at a cost of 11¢ per gallon. It figures to 24¢ per bale for fuel—one third of what Omega had formerly been paying.

The GM Diesel starts at the touch of a button. It delivers a surplus of smooth, steady power—plenty of power to handle gins, fans, press, plus a dryer added since the engine went in. It requires minimum attention, and when service is needed, the GM Diesel man is "Johnny on the spot."

Discover how this modern 2-cycle Diesel can cut your costs—hear the story from your GM Diesel distributor or write direct to us. Detroit Diesel Engine Division, General Motors, Detroit 28, Michigan.

ANSWER THE CALL CIVIL DEFENSE

DETROIT DIESEL ENGINE DIVISION

SINGLE ENGINES . . . Up to 275 H. P. **DETROIT 28, MICHIGAN** MULTIPLE UNITS . . . Up to 800 H. P.

GENERAL MOTORS

GM GENERAL MOTORS DIESEL POWER

DIESEL BRAWN WITHOUT THE BULK

E. F. Craven Company, GREENSBORO, NORTH CAROLINA
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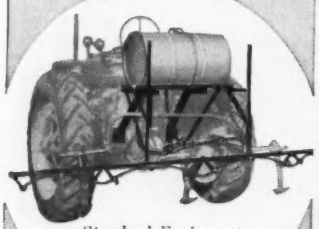
GREATEST SPRAYER BUY YET!



Standard Equipment
2 Rows

COMFORT
T. M. Reg.
CULTIVATOR MOUNT SPRAYER

EASY TO MOUNT & USE WITH OR WITHOUT CULTIVATOR

Here is the new low-cost ~~4-ROW~~ sprayer your customers have been waiting for! It's the best unit you can recommend for row crops where spraying is desired while cultivating. Model S-300 has universal brackets—fits virtually any tractor. Model S-400 is Special "Ford Type" Mount. The full ¾" positive pressure pump is full floating and gear-operated. Sprayer comes complete with adjustable drops for between-row spraying, hollow cone tips, adjustable nozzle spacing for any width row and chemical resistant hoses. Extension booms are available for spraying four or more rows. (As shown)

It's a terrific value because it's complete—nothing else to buy. Uses any standard 55 gallon drum (not furnished).

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Due to uncertainty of the material situation, we recommend orders be placed as early as possible. See your jobber or write:

COMFORT EQUIPMENT CO.
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THE COTTON GIN AND OIL MILL

PRESS

52ND YEAR

THE MAGAZINE OF THE COTTON GINNING AND OILSEED PROCESSING INDUSTRIES

Volume 52 June 9, 1951 Number 12

Published every other Saturday in our own printing plant at 3116 Commerce Street, Dallas 1, Texas

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The Cotton Gin and Oil Mill Press *is the Official Magazine of the foregoing associations for official communications and news releases, but the associations are in no way responsible for the editorial expressions or policies contained herein.*

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The Cover

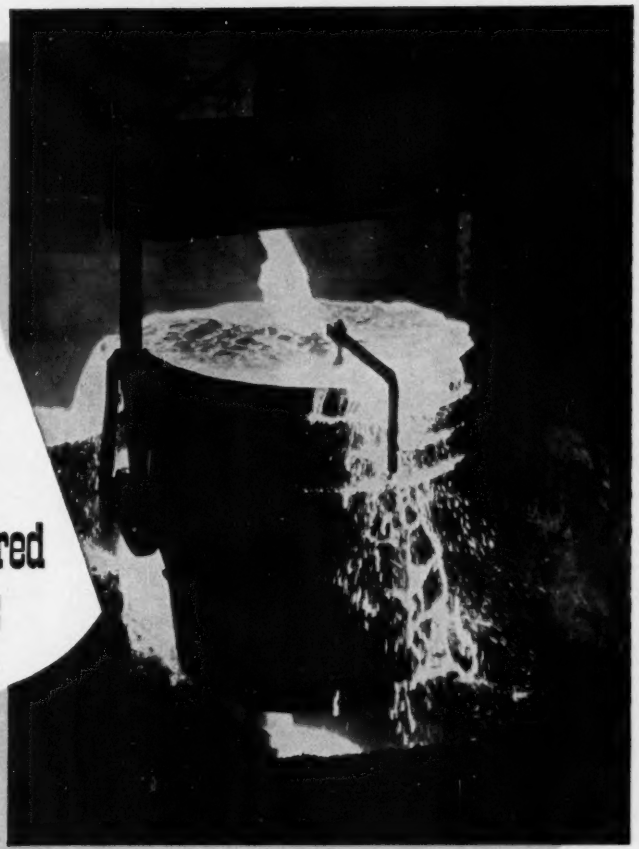
THE OLD NEGRO pictured on the cover is concerned not at all with price ceilings on ginning services or cottonseed products, and it is a safe bet, we'd say, that just so long as fishing poles and a little bait are available he isn't going to get excited about priorities. We can't ignore completely the perplexing problems that have a way of haunting our every waking hour, but it does a man good to forget them temporarily. If there's a better way to do this than while fishing, we are not much interested in hearing about it.

Photo by A. Devaney, Inc.

A PROGRESSIVE AND RESPONSIBLE PUBLICATION
READ BY COTTON GINNERS, COTTONSEED CRUSHERS AND OTHER OILSEED PROCESSORS FROM CALIFORNIA TO THE CAROLINAS

ATLANTIC STEEL COMPANY

was born and bred on cotton ties



COTTON TIES were one of the first two products rolled by Atlantic Steel Company back in 1901.

Today more than 65 products bear the well-known name DIXISTEEL. But producing fine-quality cotton ties and buckles is still an important part of our business.

From our open hearth, special-analysis steel, DIXISTEEL Cotton Ties are rolled to exacting specifications to assure uniform quality, strength, durability and finish. DIXISTEEL Buckles are made to withstand strain and pull; they won't give way or cut the tie. Scientifically designed, they thread easily, provide firm seating and will not slip up or down.

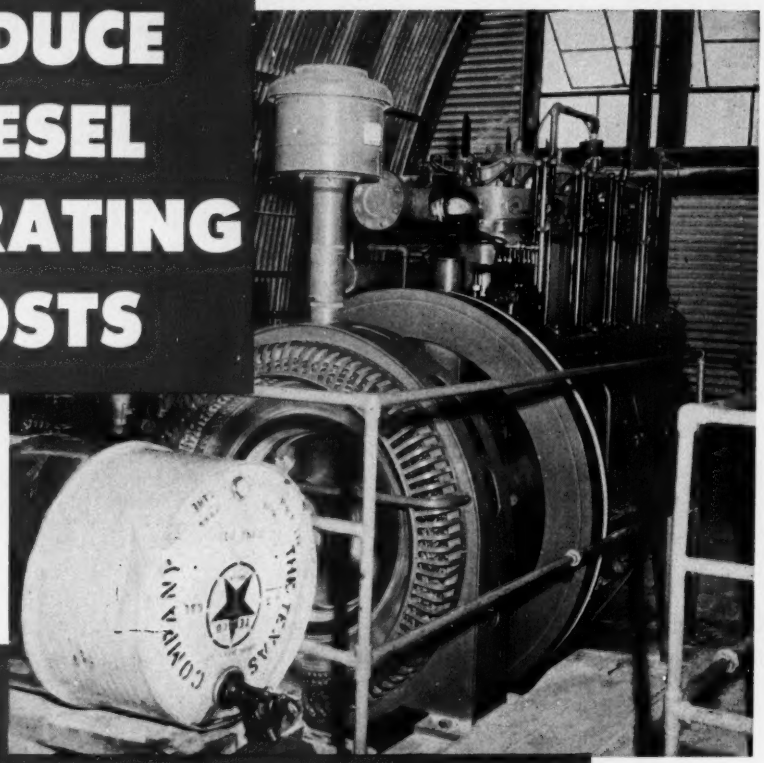
Specify DIXISTEEL—the ginner's favorite for 50 years.

Standard bundles weigh approximately 45 pounds and contain 30 ties—each 15/16 inches by approximately 19½ gauge, 11½ feet long. Thirty buckles attached to each bundle. Sixty-pound ties also are made. Both weights available without buckles. Buckles shipped in kegs or carload bulk lots.

DIXISTEEL TRADE MARK COTTON TIES AND BUCKLES

ATLANTIC STEEL COMPANY • ATLANTA, GEORGIA

REDUCE DIESEL OPERATING COSTS



. . . by lubricating with TEXACO URSA OIL X**

You'll make two big savings when you lubricate your Diesels with *Texaco Ursa Oil X***. Maintenance costs will be less and so will fuel consumption. Here are the reasons why —

*Texaco Ursa Oil X*** is fully detergent and dispersive. It cleans as it lubricates. That means freedom from carbon and sludge formations . . . less wear, less repair. Parts last longer; bearings won't corrode. *Texaco Ursa Oil X*** keeps rings free for proper compression and combustion. You get full power at lower cost per kwh. In addition, your Diesels will be protected against rust, whether running or idle.

Use *Texaco Meropa* Lubricants for enclosed gears. Their "extreme pressure" properties assure full protection, smoother operation, longer gear life and lower maintenance costs. They do not foam or thicken in service.

Let a Texaco Lubrication Engineer work with you to bring down costs throughout your mill. Just call the nearest of the more than 2,000 Texaco Distributing Plants in the 48 States, or write:

The Texas Company, 135 East 42nd Street, New York 17, N. Y.

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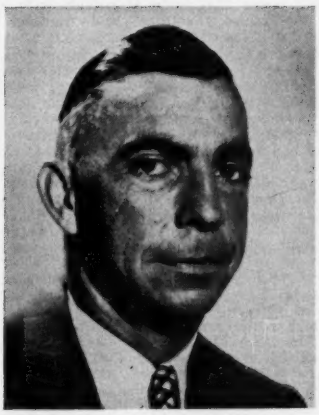
TEXACO Lubricants, Fuels and Lubrication Engineering Service

TUNE IN . . . TEXACO STAR THEATER starring MILTON BERLE on television every Tuesday night. See newspaper for time and station.

Follow the 4 Points to Better Ginning

By CHARLES M. MERKEL



CHARLES M. MERKEL

■ **THE AUTHOR, who is agricultural engineer at the U. S. Cotton Ginning Laboratory at Stoneville, Miss., presented this paper at the annual meeting of the Louisiana-Mississippi Cotton Ginners' Association, held at Alexandria, La., May 29, 1951.**

TOO MUCH may perhaps have been written during the past year about the need for a 16-million bale crop in the United States if the requirements for domestic and foreign consumption are to be met. It is not proposed here to deal with all the problems confronting the industry, but under the existing conditions it is worthwhile to discuss briefly the part that Louisiana ginners may be called on to play, and to point out some things that might help to solve their problems.

The trend all over the Cotton Belt for the past 10 years or more has been toward faster harvesting, using machines where possible, and imported or town labor in other locations. The ginner has been called on for more and better service and has been hard put to install and pay for equipment to maintain his output of high quality lint and seed from damp, wet, or trashy seed cotton resulting from these harvesting practices. Millions of dollars have been spent by the ginners for new drying, seed cotton cleaning, and lint cleaning equipment, and new and improved plants in Louisiana follow the general pattern developed across the Belt. It is much too late for those who have not already placed orders for new machinery to receive delivery on equipment in time for the 1951 season. This means that some gins must operate with the machinery now on hand in order to produce the required results. It is our intention to comment upon the advisable operating practices that should be adhered to in the interests of the cotton industry.

Last year the Extension Service, with the assistance of the ginning engineers and others, developed and publicized through the National Cotton Council and other agencies a Four-Point Program for Better Ginning. The points covered were pertinent and timely and should be carefully followed if you are to achieve the best possible results from your equipment. These recommendations were developed in consideration of a program to insure the high quality cotton the mills want and to give the farmer a bale worth more money on the local market. I highly recommend this program to you in its entirety, and will cover it point by point with you here.

Point number 1: Maintain uniform loose rolls. The importance of this point has long been recognized by all who are thinking seriously about performing quality ginning. It is hardly necessary to say more about it, but for emphasis I will make several observations. The reasons that ginners give for violating this rule are many. Among them are the desire to gin faster and turn out more bales per day and an effort to please the farmer customer by quickly ginning his load so that he may return the trailer to the field for another load. Both reasons are understandable, but the fact remains that a bale called "rough" or "gin-cut" by the classer too frequently results from fast ginning with a tight roll, and much of the value of the farmer's year's work is thus lost. From the ginner's standpoint, it is poor business, because he may not only lose a customer if the farmer is dissatisfied with the resulting poor sample, but he may also choke the gin and lose for himself an hour's ginning while he is picking saws.

The ginner is entitled to receive pay for his ginning service in proportion to the service rendered. This means that he should receive a *fair* profit on his operation and should not be so hard-pressed for revenue that he crowds his gins beyond their normal capacity. It has often been said that ginners are satisfied to operate their gins at a loss in order to have the opportunity to make a profit on cottonseed. If this is practiced in Louisiana, it should be regulated to the point where the gins may at least operate as a normally profitable self-sustaining industry.

The terms "normal capacity" and "loose seed rolls" referred to above are relative terms which vary widely with a number of factors, such as saw speed, saw spacing, roll box shape, etc. The USDA Cotton Ginning Laboratory has recommended the use of high-speed saws (650 to 700 R. P. M.) to insure maximum capacity with loose rolls and minimum fiber damage. This is still applicable to a number of old model gin stands. Later model stands have been set by the manufacturers to run at these speeds and are capable of delivering up to 9 pounds of lint per saw per hour from dry seed cotton without damage.

Point number 2 covered in this program for better ginning deals with the matter of proper feeding from the wagon. The slogan "Keep overflow to a minimum" could be discussed at some length, but it can be made profitable to both the farmer and ginner for the following reasons. It is a well-known fact that both drying efficiency and cleaning efficiency are reduced by crowding or overfeeding. Laboratory tests point out the improvements due to regular and slow feeding by obtaining an increased moisture removal in the drier and a greater trash removal by the cleaners. Obviously it is necessary to keep the gins filled with cotton if maximum capacity is to be achieved, but it should also be evident that a large overflow serves no good. This large overflow or extra cotton passed through the drier and overhead cleaning places unnecessary loads on these machines and thereby results in frequent chokages or ineffec-

tive cleaning. If the bale is two-sided, the value of the bale is determined by the "low side." This side is usually the bottom of the bale when the gin is improperly operated as explained above. When the overflow is fed back through the machinery, more weight is removed in the form of moisture and trash, but the value was set on the low side, so the farmer loses both ways. The ginner may lose further if he chokes the machinery by heavy feeding, so everyone loses. It is therefore sensible to feed only what cotton is necessary to keep the gins running at capacity.

In this connection, it is an established fact that *some* fiber damage results from over-machining. The repassing of cotton through congested and overcrowded machinery adds unnecessarily to this fiber damage.

The amount of cleaning machinery used to properly and profitably process seed cotton is the basis for the third point in the program for better ginning. The Extension Service says in point 3, "Use only necessary cleaning equipment." Your reaction to this was, no doubt, to question how much is necessary. The combined staffs of engineers and technologists at Stoneville have endeavored for years to find the current answer to this question. The data on hand which was compiled from hundreds of tests indicate what can be expected percentage-wise in trash removal as well as grade-wise from various amounts and combinations of seed cotton cleaning machinery. In general, it may be said that up to 69 percent of the foreign matter was removed in the elaborate set-up, as compared to 53 percent in the simple. The classers designated grade showed 1/3 grade improvement. The manufacturing waste in the spinning process was reduced 1 precent. The only adverse effect indicated was a slight increase in nep count, namely, from 26 to 31. It might be pointed out that further overhead seed cotton cleaning did not improve the grade significantly but tended to increase nep count and to reduce yarn appearance.

Cleaners and extractors, as used today, are of either the bulk or unit type, through which cotton passes in full volume from the drier before distribution, or in regulated smaller streams from the distributor to unit machines of suitable capacity to feed only one gin stand. The unit type operates under controlled feed and is not subjected to irregular feeding, as is the case of the overhead bulk type, but it may "dribble" after shut-off unless given attention.

The complicated system under which cotton is marketed and the many varying end uses make rather meaningless any blanket recommendation as to the amount of machinery to be employed for maximum price returns. The law of supply and demand determines the basis or points premium or discount offered for different grades. This being the case, it becomes apparent that the amount of trash removed or the bale weight loss due to cleaning will have to be accompanied by a sufficient grade improvement and increased unit price to balance bale weight loss and to pay for the extra processing expense. Generally, it may be said that it does not pay to clean hand-picked cotton grading higher than Middling. It is true that higher grades resulting from super cleaning in very elaborate outfits attract patronage and often help the morale of the farmer, but do not always mean more money to him.

Horace Hayden
1889—1951

The following tribute to the memory of the late Horace Hayden of Oklahoma will be of interest to his many friends in the ginning and cottonseed crushing industries. It is a resolution read by J. A. Rogers, secretary of the Mississippi Cottonseed Crushers Association, at the annual breakfast for state cottonseed crushing association secretaries given by the National Association staff at the convention in Palm Beach.

"Lives of great men all remind us
We can make our lives sublime
And, departing, leave behind us
Footprints on the sands of time."

Horace Hayden, lately of Oklahoma City, Oklahoma, not only left behind him "footprints on the sands of time" but also bequeathed to posterity a heritage eminently worthy of emulation.

During his many years as a resident of Oklahoma City this personable and estimable gentleman, this man of vision, integrity and enviable business acumen, contributed much to the financial, industrial and agricultural progress of his community, and State, as well as to their moral and spiritual growth.

"The dead take to their graves, in their clutched fingers, only that which they have given away."

Horace Hayden took with him to "the undiscovered country from whose bourn no traveler returns" the virtues of truth, honesty, generosity, affection, affability, kindness, thoughtfulness, consideration and tolerance, which throughout a useful and well spent life, emanated from him, together with the love and esteem of a devoted family and host of friends, admiration for his ability and integrity, the earnest petition of a community that "increasing in the knowledge and love of God, he may go from strength to strength in the life of perfect service in the heavenly kingdom" and left behind him, with all who knew him, cherished memories of friendships and associations which time will neither dim nor erase.

"Rest eternal grant unto him, O Lord; and let light perpetual shine upon him."

The last of the four points considered in the program for better ginning deals with the all important and controversial subject of over-drying. The history of artifically drying seed cotton had its beginning in Louisiana and most ginners have had experience with some type of drying. You know firsthand the benefits derived from the use of proper drying in the reduction of poor preparation, and in the ability to handle damp cotton through the gins without chokages. The Extension program is not directed against the proper use of the process, but rather against the abuse of drying which results in undue bale weight loss, shortening of the fiber, and other damage to the spinning value of the ginned lint.

The early driers were rather limited in their scope for a number of reasons. The process called, in general, for a volume of from 40 to 60 c.f.m. of heated air at temperatures ranging from 160° to 180° F. The length of exposure was determined by the number of passes or shelves in the tower but, on the average, amounted to about 12 seconds. Under extreme conditions where initially high moisture content seed cottons were conditioned, this process would remove approximately 3 percent moisture. The process was also limited in moisture removal, because steam radiators and low pressure boilers were used as a source of heat, and air temperatures rarely exceeded 200° F. Even under such limitations the process was employed widely with benefits to preparation and no damaging effects to the fiber. Two wars and the resulting labor shortage have changed the harvesting practice, with the result that more and more trashy hand-gathered cottons and machine-picked or machine-stripped cottons were brought to the gins. These cottons contained more moisture than had previously been the case, and the ginners were faced with the problem of handling this cotton for their customers to the best advantage as far as grade was concerned. It was found out at an early date that at least a partial solution to better cleaning resulted by increasing the capacity of the drying systems employed in gins. Multiple-stage drying came into general use in the Delta and in other areas where high moisture and trashy cottons were being increasingly handled. The wider use of butane and natural gas burners as a source of heat also enhanced the drying potential, as better controls and higher air temperatures could be obtained for the process. The result of all this brings us to the fact that in the modern gin it is now easily possible, in achieving superior cleaning, to reduce the moisture content of the cotton below the optimum content for good ginning, as such. This does not imply that all cotton is over-dried, but we have samples taken from gins in the field and samples from our own Laboratory where the lint moisture content was less than 4 percent.

As mentioned earlier in the discussion of drying, the efficiency of the cleaning machinery is improved by reductions in moisture content of the seed cotton. The tendency toward over-drying is an effort on the part of ginners to further improve the effectiveness of the seed cotton cleaning. Reductions in bale weight, due to excessive moisture removal and excessive seed cotton cleaning, frequently offset additional price gains due to improved grade.

In conclusion, it should be repeated that the Louisiana ginners are in a position to render a valuable service to the cotton farmer in particular and to the nation as a whole, in these times when cotton is considered to be second only to steel in importance in the world struggle. The fiber produced in this state has inherent fine and desirable properties and is in demand when properly prepared and ginned. It is the ginner's responsibility to operate the equipment according to the best accepted practices, and to produce an acceptable bale of maximum value to the mill and to the farmer customer. The U. S. Cotton Ginning Laboratory recommends for your consideration the Four Point Program for Better Ginning.

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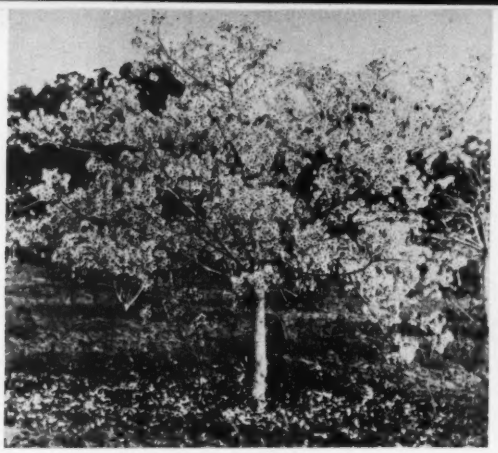


• *A tung tree in full bloom.*

• *Loading tung fruit into drying barn.*

RESEARCH INVESTIGATIONS OF U.S. TUNG OIL LABORATORIES

THIS ARTICLE reviews briefly the development of the American tung oil industry and the contributions of the U. S. Tung Oil Laboratory from 1939 to 1950 that led to solving some of the problems facing a new industry based on an exotic and unknown crop. These contributions embrace the whole gamut of problems from harvested fruit to the crude oil and its byproducts, and include drying, storage, and analysis of the fruit; hulling, storage and milling of the seed; analysis and evaluation of the oil; analysis and utilization of byproducts, and various related activities.

By ROBERT S. McKINNEY
U. S. Tung Oil Laboratory [1]
Bogalusa, Louisiana

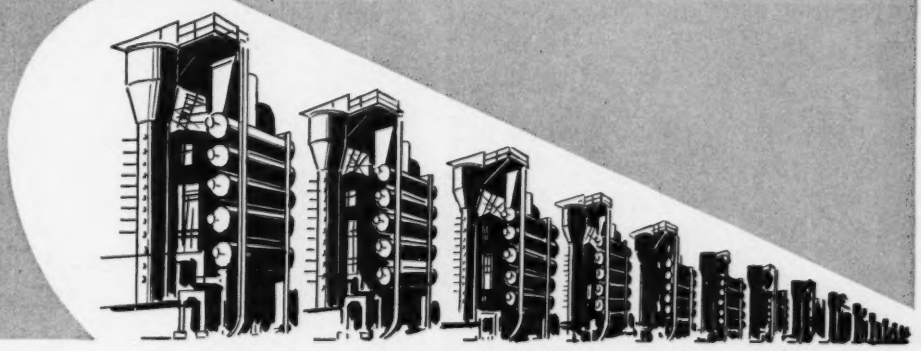
ALMOST 50 YEARS AGO, scientists of the U. S. Department of Agriculture visualized an important industry in the United States based upon the production of tung oil. Early investigations showed that the tung tree could be successfully grown within about 100 miles of the Gulf of Mexico in areas with high rainfall where the climate is not too cold and the soil is a fertile friable loam with good water and air drainage. This agricultural development has grown from a few experimental trees planted at Chico, Calif., in 1905 to millions of trees planted on 200 thousand acres in the Coastal plains of Florida, Louisiana, and Mississippi, with smaller acreages in Alabama, Georgia and Texas. In 1949, these plantings produced about 22.5 million pounds of oil at 12 mills in several states. The present domestic tung oil industry is the result of the efforts of scientists in the U. S. Department of Agriculture, the Agricultural Experiment Stations, and other individuals having interests in tung production.

When the first commercial plantings of tung trees were made in the South in 1925, tung oil had never been recovered in any country by modern equipment. This oil had been produced and used in China for centuries but the primitive methods used there were not economical in this country because of the large amount of hand labor required. Early tests showed that the thick hull could be removed from the kernels and seed by the use of a disc hulling device and shaker screens. The continuous press was found to be preferable to the hydraulic press for the expression of the oil.

The tung fruit generally contains four or five seeds, is about two inches in diameter and is covered by a hull about ¼ inch thick. Each seed is enclosed by a hard shell in which is found the kernel. The kernels constitute about one-third of the weight of the fruit and contain about 60 percent oil. In the United States, the fruit, after partial drying, are processed by passing them through hullers and separators to remove the hulls and some of the shell from the seeds. The sep-

[1] One of the laboratories of the Bureau of Agricultural and Industrial Chemistry, Agricultural Research Administration, U. S. Department of Agriculture.

16 more oil mills have chosen EXSOLEX*



The Oil Milling Industry is realizing more and more that Exsolex is the most efficient process for handling oil bearing seeds and nuts. In the last few months alone, *sixteen* oil mills have chosen Exsolex! Some of these installations already are almost completed, others are in the manufacturing stage. These sixteen are added to those already operating.

Exsolex is taking the oil milling field by storm. Oil millers realize that Exsolex produces *more quality oil and meal per ton of material* than any other process. Then, too, they know with Exsolex they can operate efficiently and profitably on nearly any oleaginous material available, leaving a residual oil in the meal as low as .3% depending upon the material processed.

These are but a few of the reasons why Exsolex is being chosen by so many operators. As future installations are completed, they will be reported to you. In the meantime, let Exsolex increase *your* profits. Ask Anderson to recommend the right Exsolex installation for your particular requirements.

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*The first of a series of patent applications covering the Exsolex process has been officially allowed and U. S. Patent 2,551,254 has been granted by the patent office. Further applications are pending.

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arated seeds are then ground, preheated, and the oil expressed in continuous presses. The ground material is conveyed through the press by a screw operating against a restricted opening which forces the oil through the fine slits of the cage or barrel. After passing through a filter press, the oil is pumped to storage tanks. The residual meal is discharged from the end of the press in the form of a cake.

The domestic production of tung oil started in 1932 and in that year 150,000 pounds of oil were shipped from the first tung mill located near Gainesville, Fla. By 1938, domestic production had increased to 3.5 million pounds. In this year so much interest was shown in this new development that Congress appropriated funds for investigations on this crop and field laboratories were set up for this purpose.

The part of this research program pertaining to the development of improved varieties and strains of trees and improved cultural practices was assigned to the Bureau of Plant Industry, Soils and Agricultural Engineering. The other part, dealing with fruit and seeds after harvesting and including the production and utilization of tung oil and its by-products, was assigned to the Bureau of Agricultural and Industrial Chemistry.

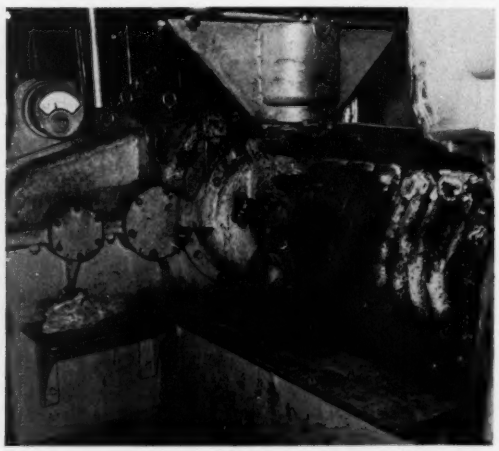
The investigations of the latter Bureau were begun in Washington in 1938, but in the summer of 1939 field laboratories were established at Bogalusa, La., and Gainesville, Fla. Two chemists were employed at each of these field laboratories at the start, with another chemist added to the group at Gainesville in 1945. The work of the two laboratories was consolidated at Bogalusa and the Gainesville station abolished in July, 1948. Since that time three chemists have been employed at Bogalusa. In March, 1949, the supervision of the tung oil investigations was transferred from the head of the Agricultural Chemical Research Division to the head of the Oil and Oilseed Division of the Southern Regional Research Laboratory, New Orleans, La.

The location of the U. S. Tung Oil Laboratories near the producing areas and processing mills made it possible to keep in touch with the industry and to cooperate with other Federal and State agencies in solving the many problems arising from this new enterprise. The results of the investigations of the U. S. Tung Oil Laboratories have been published in 42 technical papers and four public service patents have been obtained (see attached references). Yearly, technical information is furnished to about 130 visitors to the laboratory. Information is also furnished in reply to an even larger number of mail and phone inquiries and through the medium of reprints of technical publications.

An important part of the work of the U. S. Tung Oil Laboratory has been carried out in cooperation with the Bureau

(Continued on Page 36)

● ***Close-up of tung fruit separator.***



● ***Close-up of cage of tung oil press.***

● ***Filtering tung oil at tung oil mill.***

● ***Filtering tung oil in laboratory.***

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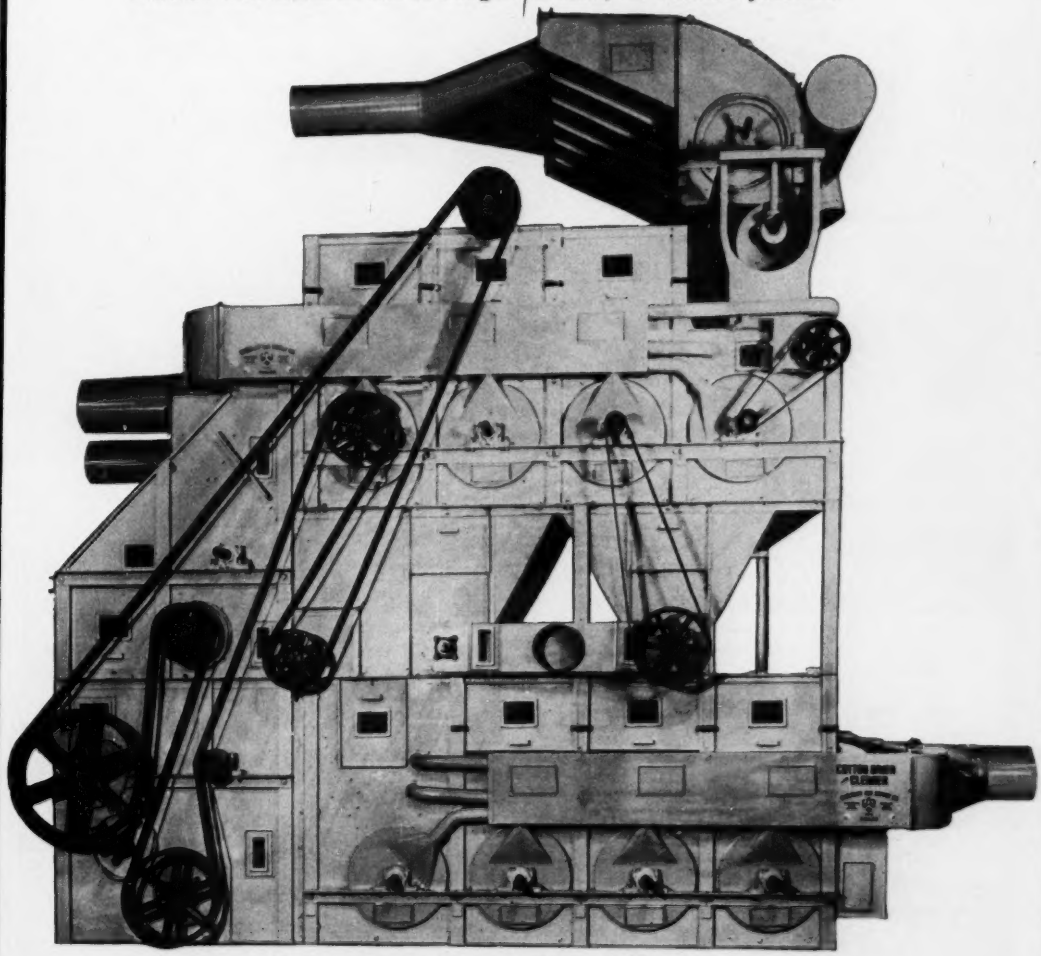

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At Biloxi—

Mississippi Crushers To Meet June 14-15

■ **Forum discussion of cottonseed processing is planned; Kemper Bruton, George V. Fish and Harris Barksdale to be other speakers.**

A forum discussion on "Processing Cottonseed" has been scheduled for the opening session of the Mississippi Cottonseed Crushers Association at the Buena Vista Hotel in Biloxi, Miss. Although business sessions for the forty-second annual convention of the Mississippi crushers have been planned for the mornings of June 14 and 15, the convention will get under way the evening of June 13 with the traditional barbecue on the beach at the headquarters hotel.

• **Opening Session**—The first business session will begin at 9:30 a.m. June 14. The Rev. Edward A. DeMiller, rector of the Church of the Redeemer at Biloxi, wil give the invocation.

T. P. Wallace, Carver Cotton Gin Co., Memphis, Tenn., will act as moderator for the panel discussion. Taking part will be M. C. Verdery, Anderson-Clayton & Co., Houston, Texas; N. H. Moore, Delta Products Co., Wilson, Ark.; O. H. Sale, Davidson-Kennedy Co., Atlanta, Ga.; J. R. Mays, Jr., Barrow-Agee Laboratories, Memphis; and E. H. Tenent, Woodson-Tenent Laboratories, Memphis.

W. Kemper Bruton, National Cotton Council field service supervisor for the mid-South, Memphis, will make the only formal address at this session.

• **Second Day's Program** — George V. Fish, in charge of the Jackson, Miss., Weather Bureau office, will address the Mississippi crushers at the session June 15.

Harris Barksdale, Southland Cotton Oil Co., Jackson, will reminisce about his early experiences in the cottonseed crushing industry.

• **Entertainment** — Besides the barbecue as the delegates gather on the evening preceding the convention proper, entertainment will include a session for ladies attending the convention at 10:30 a.m. June 14 and the annual dinner-dance that night at 8 o'clock. Both the morning affair and the dinner-dance will be held in the Hurricane Room at the Buena Vista.

• **Officers**—Officers of the Mississippi Cottonseed Crushers Association are J. B. Perry, Jr., Grenada, president; A. S. Campbell, Webb, vice-president; and J. A. Rogers, Jackson, secretary.

L. H. Moore Leaves Extension Service

L. H. Moore, extension entomologist at New Mexico A. & M. College, has resigned to accept a position as research entomologist with the Velsicol Corp. in Chicago, G. L. Boykin, associate extension director, has announced. As extension entomologist, Mr. Moore directed the insect control program for New Mexico Extension Service.

USDA Announces 1951-Crop Cottonseed Supports

The U.S. Department of Agriculture announced June 1 that price support loans on 1951-crop cottonseed will be available at $65.50 per ton for basis grade (100) and that in areas where a purchase program may be necessary purchases will be made at $61.50 a ton basis grade (100) cottonseed.

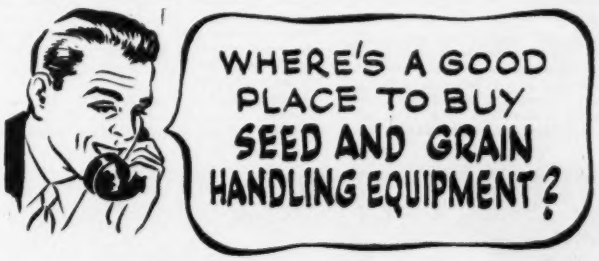
Prices for 1951-crop cottonseed will be supported by means of loans, purchase agreements and purchases of cottonseed and of cottonseed products. The supports reflect 90 percent of the Jan. 15 parity price of $71 a ton for average quality seed. Officials stated that the supports are in line with the 90 percent of parity support which the department announced in February for 1951-crop soybeans.

Other provisions of the support program for 1951-crop cottonseed will be developed and announced at a later date. Information as to detailed operating provisions during the active marketing season will be available through the Production and Marketing Administration commodity, state and county offices.

Peanut Shellers to Meet

Annual convention of the Southwestern Peanut Shellers Association will be held at the Buccaneer Hotel, Galveston, Texas, June 14, 15, 16 and 17. Program had not been announced as this issue of *The Press* was printed.

• Farm land values in the U.S. have risen 14 percent in the past year.



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At Alexandria on May 29

Ginners of La.-Miss. Elect George Baird

■ Good talks feature one-day convention. Delegates hit at price ceilings, call for "realistic" inflation-control plan, name Biloxi as site of 1952 meeting.

Ginners in Louisiana and Mississippi were sporting wrinkled brows over the drouth that threatened the cotton crop in the two states but many put that problem aside for a day to attend the annual meeting of the Louisiana-Mississippi Ginners Association at Alexandria, La., on May 29.

They were well repaid for making the trip, too, for they heard a number of speakers talk about problems other than the drouth that the ginners face in carrying out their responsibilities in producing a 16-million-bale crop this year. And when they departed for their home grounds they had elected a new president and reelected a vice-president, the secretary and the treasurer to serve the association another year.

George E. Baird, Inverness, Miss., succeeds J. H. Williams, Natchitoches, La., as president; C. E. Fontenot, Eunice, La., will again serve as vice-president for Louisiana; Gordon W. Marks, Jackson, Miss., continues as secretary; and Garner M. Lester, also of Jackson, continues as treasurer. The Mississippi unit of the association will name its vice-president later.

First speaker was Kemper Bruton of the National Cotton Council, Memphis. He discussed briefly the effort to produce 16 million bales of cotton this year, then spoke at some length on what all of us must do to overcome the effort of many in government and other high places to gain control of business, industry and agriculture. Mr. Bruton emphasized the merits of our free enterprise system and called on his listeners to take every possible step in the counter fight we must make to preserve our system and keep it from falling into the hands of the socialists.

Second speaker was Charles M. Merkel, engineer in charge at the U.S. Cotton Ginning Laboratory, Stoneville, Miss. He discussed the benefits of following the 4-Point Program for Better Ginning that was launched last year and urged the ginners to adopt that program for the 1951 season. Mr. Merkel's paper appears in full in this issue, beginning on page 13.

Vernon P. Moore, also with the laboratory at Stoneville, in the research and testing division, discussed the effects of ginning practices on cotton quality. His paper is also printed in full in this issue and begins on page 24.

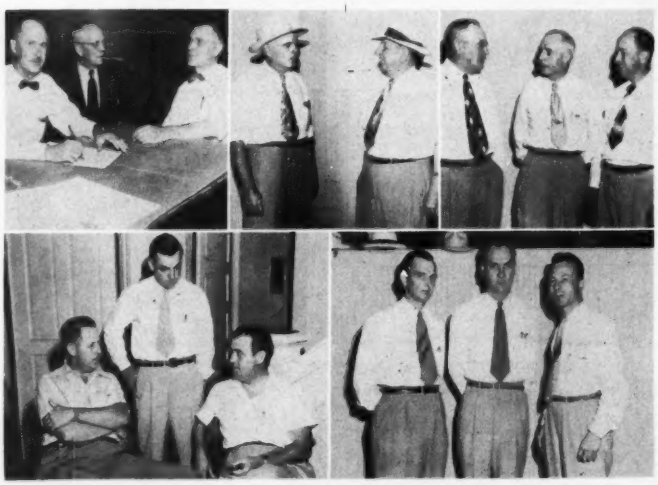
A subject of special interest to all ginners—to all Americans, in fact—was discussed in an inspiring manner by O. J. Bori, Jr., of the Illinois Central System. Entitled "A Time for Warning," Mr. Bori's illustrated talk dealt with Americanism vs. communism. He told how socialists and communists have invaded the federal government and even infiltrated into some of our churches, spreading the evils of the two systems among the innocent under the guise of movements to "improve" the lot of the people. But, he warned, no nation that ever turned to socialism ever was able to get completely away from it—and no nation that has ever been beat to its knees by the communists has ever risen to its feet again.

Mr. Bori listed the so-called "benefits" of socialism and communism, praised by the fellow travelers who would see America scuttle her freedoms . . . "benefits" so-called, but actually steps to slavery and a system under which the state and a few men would control the lives of every one of us.

Other speakers were W. E. Anderson, Louisiana's commissioner of agriculture, and L. F. Curl, of the Division of Pink Bollworm Control, Bureau of Entomology and Plant Quarantine, USDA. Both of these men spoke mainly about the pink bollworm and explained the control regulations to the ginners.

Just before the meeting adjourned the association unanimously adopted resolutions (1) asking that no price ceilings be placed on ginning charges; (2) calling on the government to abolish cotton price ceilings; and (3) urging Congress to adopt realistic methods to control inflation through (a) reduction of money in circulation, (b) increased production, and (c) governmental economy.

The ginners voted to hold a two-day convention at Biloxi, Miss., next year. Dates will be set later.



Photoviews of Louisiana-Mississippi Convention

■ UPPER LEFT—Seated at a conference table are, l. to r., Gordon W. Marks, Jackson, Miss., secretary of the Louisiana-Mississippi Cotton Ginners' Association; J. B. Snell, Minden Cotton Oil & Ice Co., Minden, La.; and Garner M. Lester, Jackson, Miss., treasurer of the association.

■ UPPER CENTER—G. D. Brown, left, ginner of Lyon, Miss., and George E. Baird, Inverness, Miss., new president of the association, in a serious conversation.

■ UPPER RIGHT—L. to r., W. E. Anderson, Louisiana commissioner of agriculture; L. F. Curl, Division of Pink Bollworm Control, USDA-BEPQ, San Antonio, Texas; and J. H. Williams, Natchitoches, La., retiring president of the association. Mr. Anderson and Mr. Curl were convention speakers.

■ LOWER LEFT—Charles M. Merkel, standing, agricultural engineer, U.S. Cotton Ginning Laboratory, Stoneville, Miss., listens in on a conversation between Dalton E. Gandy, left, field representative of the Educational Service, National Cottonseed Products Association, Ruston, La., and Jules Cazayoux, Jr., Southern Cotton Oil Co., New Roads, La. Mr. Merkel addressed the meeting.

■ LOWER RIGHT—L. to r., Vernon P. Moore, U.S. Cotton Ginning and Fiber Laboratory, Stoneville, Miss.; Kemper Bruton, National Cotton Council, Memphis; and O. J. Bori, Jr., of the Illinois Central System. All were speakers on the convention program.

OPS Eases Cottonseed Meal Ceilings

Acting to help assure shortage areas of an ample supply of cottonseed meal and other cottonseed feed products for livestock, OPS last week authorized dealers to add higher transportation costs to their prices for these products which provide proteins for livestock. The agency said it will mean slight increases for livestock feeders.

Shortages have forced some dealers to go to distant markets to buy supplies, OPS explained, causing them to take a loss of from $3 to $5 because of higher transportation costs. Small dealers are unable to absorb the loss and have quit selling these products, the agency said.

Resellers will be permitted to pass along the extra transportation costs to purchasers. Described as an emergency measure, the order became effective June 6 and will continue until Sept. 1. Arkansas, Louisiana, Oklahoma and Texas were mentioned as being among areas where shortages exist.

Joint Meeting for

Alabama-Florida and Georgia Crushers

■ **Annual combined convention will be held at Pensacola, Fla., on June 18-19. Separate business sessions will follow joint program.**

Annual joint convention of the Alabama-Florida Cottonseed Products Association and the Georgia Cottonseed Crushers Association will be held at Pensacola, Fla., June 18-19, with headquarters at the San Carlos Hotel.

• **Homer G. Ray to Preside First Day**—J. T. Murphy, Pensacola, will call the convention to order at 10 a.m. June 18. Presiding the first day will be Homer G. Ray, Jr., president of the Georgia crushers.

Earle Cocke, Jr., national commander of the American Legion, is featured speaker for the convention. His subject is "Reporting on World Conditions."

Walter B. Moore, assistant director, National Cottonseed Products Association Educational Service, Dallas, will discuss "Your Essential Insurance Policy" in the other address scheduled June 18. The business session will be confined to the morning, with the afternoon left free for the annual golf tournament.

• **F. W. Hurston in Charge Second Day**—F. W. Hurston, president of the Alabama-Florida association, will preside at the second business session, June 19. J. H. Bryson, new president of the National Cottonseed Products Association, Dothan, Ala., will bring greetings to the two state associations from the national organization. Also appearing on the program will be Ann Adams, Tuscaloosa, Ala., who is Alabama Maid of Cotton.

Speakers will include Dr. T. J. Cunha, head, Department of Animal Husbandry and Nutrition, University of Florida, who will talk on "New Developments on Cottonseed Meal as a Protein," using slides to illustrate his talk. Final speaker will be Frederic H. Heidelberg, National Cotton Council field service supervisor in the Southeast, Huntsville, Ala., whose subject will be "Cotton at a New Frontier."

The two associations will hold separate business sessions following adjournment of the joint session.

• **Entertainment**—Entertainment during the convention will begin with a buffet supper at the headquarters hotel at 7:30 p.m. June 17, preceding opening of the business meeting June 18.

Ladies will be entertained at a luncheon at 1 p.m. June 18 at Martine's House of Fine Foods. The golf tournament will begin at 2 p.m. at the Pensacola Country Club. Golf prizes will be presented at the banquet that evening at the Country Club, beginning at 8 p.m. The banquet will be followed by a dance.

• **Officers**—Officers of the Alabama-Florida Cottonseed Products Association are F. W. Hurston, Cullman, Ala., president; and T. R. Cain, Montgomery, Ala., executive secretary.

Officers of the Georgia Cottonseed Crushers Association are Homer G. Ray, Jr., Moultrie, president; Sam McGowan, Centersville, vice-president; and J. E. Moses, Atlanta, secretary-treasurer.

Soybeans Take Second Place in Illinois

A comparative newcomer, the soybean, is threatening corn's position as king of Illinois farm crops, the Illinois Agricultural Department reports.

Soybeans, listed as a curiosity in 1910, now occupy second place among the state's farm crops, with only corn holding its own as more important. The soybean has forced those old standbys, oats, hay and winter wheat, to third, fourth and fifth places, respectively. These five crops accounted for 98 percent of all crops harvested in Illinois during 1950.

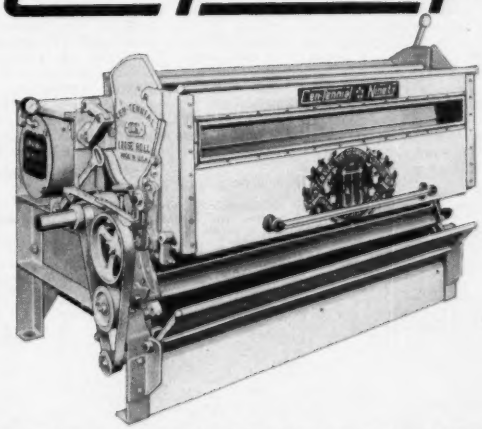
Margarine Wins Again

Margarine won another round in its fight for recognition as an acceptable food product when Governor Warren of California late last month signed into law a bill which will allow the state to purchase colored margarine for use in state institutions when federal government surplus butter is not available.

Explosion Wrecks Refinery

An exploding boiler wrecked the Malaga Oil Products olive oil refinery near Lindsay, Calif., May 22, scattering debris for 300 yards. No one was injured, but damage was estimated at $25,000.

Cen-Tennial Ninety



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Some Elements of
COTTON QUALITY
As Affected by Ginning

■ **THIS PAPER was presented by the author at the annual meeting of the Louisiana-Mississippi Cotton Ginners' Association, held at Alexandria, La., May 29, 1951.**

By VERNON P. MOORE

Cotton Technologist, Stoneville Cotton Laboratory, Research and Testing Division, PMA Cotton Branch

EMPHASIS has been placed more and more on the production of higher quality cotton fabrics, through advertising, sales promotion, and educational campaigns carried on by various groups. Cotton is used not only for traditional apparel but it has become prominent in the fashion centers of the country. As a result of laboratory research, the natural qualities and appearance of cotton goods have been enhanced to the extent that cotton is now being used in fields dominated in the past by other fabrics and it has been found, in many instances, to have superior qualities.

The production of quality cotton goods requires the concerted efforts of all segments of the cotton industry. No one group between the cotton breeder and the cotton spinner can make appreciable headway without the support of other branches of the industry in preserving or improving the quality of their product. Furthermore, in order to accomplish their purpose it is necessary that the various parts of the industry be informed of the problems and needs peculiar to each group. Through better understanding, the industry gains confidence and as a whole will profit from it. This has been clearly demonstrated by the growing success of such undertakings as the Spinner-Breeder Conference, which over the span of a relatively few years has grown from a very modest beginning to a most important medium through which these two major groups of the cotton industry meet on common ground to become familiar with the progress and problems of each other and to discuss ways and means of accomplishing their common goal—a better product for the consumers of the many thousands of items for which cotton is used. It is only through a concerted aggressive action of this type that any industry will achieve healthy growth.

Progressive cotton ginners have realized that ginning and the cotton industry as a whole would benefit through a discussion of mutual problems and an exchange of ideas. The state ginners' organization serves as a medium through which the ginners may come together for the discussion of common problems and practices of concern to each ginner. District meetings held periodically at convenient locations within the state have proved valuable in solving local problems and keeping abreast of current developments within the ginning industry. The National Cotton Ginners' Association, made up of officers of the several state organizations, deals with matters of interest to the cotton industry on a national basis.

The cotton gin is a service enterprise. In many cases the ginner has no financial interest in the cotton being ginned, and he is concerned only in performing a type of service which will satisfy his customers. In rendering this service the ginner is performing the important function of preparing the raw material for use by other segments of the industry. The gin either preserves or reduces the ultimate value of a bale of cotton entering the channels of trade. When a bale leaves the gin it is a raw product of definite value destined for uses dependent on its quality. The end use of this raw product is influenced by the operation of the gin and its cleaning and conditioning equipment, just as it is influenced by variety, weather, and harvesting conditions.

Cotton is sold, as we know, on grade and staple length but these factors have not proved to be sufficient to describe the cotton from the standpoint of cotton spinners who are the farmers' customers. Broad descriptive terms, such as gin-cut, seedy, weak, and wasty—to name a few—are familiar to the ginner as visual characteristics of certain bales, and these characteristics are taken into consideration when cotton is classed. The term character, in speaking of cotton, is also familiar to the ginner but its meaning is rather obscure except that the gin does in some cases affect it, and a sample is good or bad in character as the case may be. In order to analyze the character of cotton and to provide a basis for predicting spinning quality certain machines and techniques have been developed. These serve to guide the cotton breeder in his search for superior qualities and the mill buyer in his purchases of fiber for specific uses. In recent years ginners have become familiar with some of the various fiber-testing terms which are replacing the vague description "character." Such items as tensile strength, fiber length uniformity, and neppiness, along with grade and staple, are elements that are influenced by the gin and which, to some extent, control spinning quality. Cotton breeders are making a concerted effort to breed cottons, of high tensile strength and length uniformity, which do not nep easily and which have desirable agronomic qualities such as earliness, high turnout, high yields, and wilt resistance. The ginner is called upon to preserve the inherent spinning qualities through proper operation of his conditioning and ginning equipment.

The quality element of tensile strength is primarily dependent on the cotton variety, soil conditions, and weather during the ginning season. Early-season cotton is stronger than is cotton harvested late in the season. Tensile strength is not affected by the gin-cleaning machinery, but very high drying temperatures have been found to weaken the fiber to a certain extent. High drying temperatures have been found to reduce the tensile strength of the fiber about as much as the average difference between early- and late-season cotton. Samples tested from all leading varieties of cotton grown across the Cotton Belt last season showed that early-season cotton averaged 77,400 pounds per square inch in tensile strength as compared with 75,000 pounds per square inch for late-harvested cotton.

Normally, the fiber length uniformity ratio of most of the leading varieties of cotton will range between 75 and 80. Cotton breeders are constantly striving to develop cottons of higher length uniformity. Generally, the more uniform a cotton the lower the manufacturing waste and the more uniform will be the yarn which is spun from it. This element is usually directly associated with the grade of the cotton. Therefore, harvesting and ginning have a direct bearing on it. Excessively high drying temperature on relatively dry cotton reduces length uniformity. Also, skinning the seed, which is one of the results of tight-roll ginning, causes the inclusion of short linters fibers

(Continued on Page 28)

Table 1.—Effects of three commercial lint cleaners in cleaning lint ginned by varying rates of feed with respect to classification, manufacturing performance, and carded yarn quality results on late-season machine-picked cotton, crop of 1949. [1]

Classification factor	Normal rate of feed		Fast rate of feed	
	Without lint cleaning	Saw cylinder lint cleaning	Without lint cleaning	Saw cylinder lint cleaning
Grade:				
Index	94.4	96.1	90.2	92.8
Designation	SLM	SLM+	SLM—	SLM
Staple length, 1/32 inch	33.8	33.7	33.8	33.8
Foreign matter content of lint, percent	5.5	4.0	6.2	4.9
Picker and card waste, percent	11.1	9.5	12.0	10.8
Neps per 100 sq. in. of card web	49	53	56	70
Yarn skein strength, pounds				
22s	102	104	99	98
36s	58	59	56	56
50s	35	35	34	34
Yarn appearance, index [2]	99	99	95	94

[1] Classification represents averages of 4 samples ginned on each of 3 lint cleaner gins, and spinning tests represent 2 composite samples ginned on each of the 3 lint-cleaner-equipped gins.
[2] Index represents average appearance of all numbers spun; an index of 110 is used for grade B; 90, for grade C; and 70, for grade D.

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The Cotton Gin and Oil Mill Press

BAILEY

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• **Amendment May Stymie Mexican Labor Bill**—A tactical blunder by Sen. Allen J. Ellender, chairman of the Senate Agriculture Committee, may result in the Mexican border being closed to importation of farm workers on July 1. It was his lapse of usual astuteness on farm matters that opened the door for adoption by the Senate of the Douglas amendment to the farm labor bill.

Several weeks ago, at the behest of the Labor and State Departments, Ellender introduced a bill making it a felony, punishable by one year in prison and $1,000 fine, for employment of any worker in this country illegally. It was aimed specifically at stopping employment of Mexican wet-backs. Ellender had the bill sent to his committee and promptly pigeon-holed it with the intention that it remain there.

Then he took his Mexican farm labor bill to the floor of the Senate. Everything went smoothly until Sen. Paul Douglas reached into the pigeon-hole and came out with the administration-supported wet-back bill. He offered it as an amendment to the Mexican farm labor bill. Surely, he argued, the distinguished senator from Louisiana acted in good faith in introducing it and so couldn't possibly object to having it passed along with the Mexican labor bill.

The Senate assumed that he had acted in good faith and so tacked on the Douglas amendment. House backers of the companion Poage bill to bring in Mexican workers became alarmed. They let the Poage bill gather dust in the House Rules Committee rather than risk sending it to the floor for a vote and a certain attempt by labor-minded members to add the Douglas amendment.

Spokesmen for farm organizations and employers of Mexican labor are scheduled to meet here Monday to discuss strategy with Rep. Bob Poage and others. The groups are agreed that they would prefer no legislation to adoption of a bill including the Douglas amendment. The problem is to get the bill through the House without it and then kill the amendment in conference.

There have been some rather broad hints from Mexico, through the U.S. State Department, that if the bill to make the U.S. government responsible for recruiting and transportation is not adopted the present agreement will be allowed to expire on June 30. It has been intimated, also, that Mexican workers now in the country under contract will be recalled.

• **Cottonseed Price Supports Are Set**—A cottonseed price support loan and purchase program announced June 1 by the Agriculture Department is intended to keep prices to producers at not less than 90 percent of parity. Details of the program are being worked out and will be announced later.

Loans on 1951-crop seed will be at $65.50 per ton for basis grade (100) and, in areas where purchases are necessary, the purchase price will be $61.50. The support rates are in line with the 90 percent of parity supports announced early this year for 1951-crop soybeans.

Detailed operating provisions of the program will be sent later to state and county offices of the Production and Marketing Administration.

OPS, on the same date, announced a temporary amendment to the ceiling regulation on cottonseed to permit sellers of meal and other cottonseed feed products to add increased cost of transportation in acquiring materials to their ceiling prices.

Because of local shortages of cottonseed, OPS reported, many dealers have had to go to other areas to obtain supplies and this has increased their normal transportation costs by as much as $3 to $5 a ton. The amendment is dated to expire on Sept. 1.

• **OPS Extension Is Uncertain**—There appears to be small prospect, as matters now stand, that Congress will pass a death sentence on price and wage controls. Most congressmen say their mail is running heavily against extension of OPS, but they add that they don't dare kill all price controls.

Congressional hearings have developed overwhelming opposition to OPS. But the administration's persistent harping on the threat of inflation by fall has many congressmen afraid to let OPS die. They think the criticism for renewing OPS would be less than the abuse they would take if inflation should follow repeal of controls.

Admittedly, it is dangerous to forecast the outcome of OPS until all the arguments are in and the votes have been counted. Many critics of OPS contend they have a good chance of ending the life of that agency. Congress very probably can't reach a decision by June 30, expiration date of the present Defense Production Act.

Hearings on DPA extension are due to be concluded late next week or early the following. Debate on the bills probably will be interrupted to provide for passage of a 60- or 90-day extension of the present law. Livestock groups intend to pressure for a provision in the extension resolution to prohibit the application of Aug. 1 and Oct. 1 rollbacks on beef prices. The vote on that may give some indication of farm opposition strength to OPS.

• **Cotton Has Strong Case Against Ceilings**—Cotton spokesmen presented a strong and convincing case against OPS ceilings and other controls. But they may not have persuaded the congressional committees to order cotton removed from ceilings. That, anyway, is the opinion of many observers.

Rhea Blake, executive vice-president of the National Cotton Council, and W. D. Lawson, president of the American Cotton Shippers Association, were among those who did a creditable job of speaking for cotton.

Blake charged that ceiling regulations "have brought chaos to the whole cotton merchandising industry" and that, in the case of cotton, they are undermining the very force which is most important in fighting inflation—efficient and abundant production.

Both spokesmen presented identical 6-point anti-inflation programs calling for (1) increased production, (2) elimination of all non-essential government spending, (3) encouragement of private savings, (4) higher taxes, (5) curbs on expansion of credit, and (6) allocation of critical materials.

• **Government to Ask for Another Big Cotton Crop**—The government will be shooting for another bumper cotton crop in 1952. Preliminary production planning conferences point to another goal of at least 16 million bales, although official announcement of this will not be made for several weeks.

Agriculture Department cotton people are confident the 1951 crop will approximate 16 million bales, barring unfavorable weather or excessive weevil damage. We will need another crop just as large next year, they say.

Government planning now is based on expectations that exports from the 1951 crop will be between four and five million bales. They also are counting on scheduling at least five million bales for export from the 1952 crop.

• **CCC to Pool 1950-Crop Cotton**—Formal notice has been issued by CCC that all 1950-crop cotton under loan on Aug. 1 will be pooled. The loans mature on July 31 and will not be extended, CCC announced.

Only a very small amount of cotton is involved. Of the 8,002 bales placed under loan, CCC reports only about 3,000 bales remain to be redeemed.

Worried About Insects? This Farmer Buys Them

When it comes to cotton insect control, fighting fire with fire might be the motto of E. L. O'Meara, who has 1,000 acres in cotton in the Texas Rio Grande Valley.

Mr. O'Meara has been troubled with aphids in his cotton since early spring. But chemicals usually used to kill aphids also kill their natural enemy, the ladybug and, besides, it "costs a lot of money." So he is fighting bugs with bugs, "millions of them," which he has imported from Arizona by air express.

Learning of a man in Arizona who sells ladybugs wholesale, Mr. O'Meara ordered 10 gallons of the insects. When they arrived by air express, he turned loose half of them on his 400-acre Sebastian tract, the others on his 600 acres near Laredo.

"They went right to work," he reported.

At Virginia Beach—

Carolinas Crushers Have Big Meeting

■ South Carolina association re-elects officers; North Carolina group names W. V. Westmoreland president and J. D. Medlin vice-president.

The North Carolina and South Carolina cottonseed crushers' associations closed their joint three-day meeting at Virginia Beach, Va., on Tuesday, June 5, with a registration figure just past the 300 mark.

• **NCPA Officials Address Convention**—The first business session on Monday, June 4, was opened by R. M. Hughes, president of the South Carolina group. He introduced the visitors, among whom were J. H. Bryson and T. H. Gregory, president and executive vice-president, respectively, of the National Cottonseed Products Association. Mr. Bryson spoke briefly about the possibility of support price worries **instead** of ceilings on cottonseed and cottonseed products. Mr. Gregory confirmed this possibility in his remarks. He also reiterated the threat of nationalism and socialism in this country through the regimentation of all industry.

• **Fleming Warns Ceilings Are Inflationary**—First scheduled speaker on the program was Roger Fleming, secretary-treasurer of the American Farm Bureau Federation, Washington, D. C., whose subject was "The Choice Is Yours."

Speaking of inflation, Mr. Fleming said that this situation is initially caused by "anticipatory buying" and by wage rates and prices being raised ahead of proposed government controls. Another definite inflationary trend, he stated, was the pumping of $8,000,000,000 into the money stream of the nation, thus diluting the value of the dollar. Price and wage controls, as they are being used today, are inflationary, not deflationary, he continued.

Mr. Fleming suggested these remedies for inflation: (1) greatly increased production, especially in agriculture; (2) keeping the supply of money down, principally by keeping the lid on non-defense spending; (3) tax reduction, and (4) tightening of credit controls.

• **Dunn Discusses Cotton Controls**—Second speaker on the program was Read Dunn, Jr., National Cotton Council, Washington, D. C. In his opening remarks on "Saving the American Dollar" Mr. Dunn complimented John Moloney, National Cottonseed Products Association economist, of Memphis, Tenn., on his testimony before the Senate recently with reference to the difficulties placed on the cottonseed industry by present price and wage controls. Mr. Dunn stated that, although nothing definite has come out of Congress in that regard since the testimony, some very encouraging signs are beginning to appear. He then touched briefly on difficulties encountered by various branches of the cotton industry in the present marketing situation. Raw cotton ceilings necessitate an entirely new marketing system, eliminating the middleman, he declared, or the cotton merchant will be caused to violate the law in order to stay in business.

Textile mills, Mr. Dunn pointed out, do not dare sell materials on advance contracts because of constantly changing government controls. As a consequence, the textile mill volume is down to 25 percent of the volume at this time last year.

The cotton ginner is in a similar dilemma, he continued, with regard to his prices for ginning services. No definite or workable ruling, he said, has yet been issued by OPS.

The business session on June 5 was called to order by Paul Keller, president of the North Carolina association, who made a report in which he stated that the survival of the oil milling industry in the Carolinas during the last two lean years can be attributed to the financial stability of the mills, speculative acumen of mill officials and the use of soybeans to supplement the cottonseed supply.

• **Lester Cites Tax Statistics**—Following Mr. Keller on the program was Garner M. Lester, Jackson, Miss., treasurer of the Louisiana-Mississippi Cotton Ginners' Association and president of the National Tax Equality Association, who gave some startling tax statistics in his talk on "Yesterday, Today and Tomorrow . . . Taxes." He pointed out that in 1850 the annual federal expenditure was $39,000,000 and in 1952 the annual budget is expected to be $70,000,000,000, a rise much out of proportion to the increase in population of the U.S. in the last 100 years. The 1952 budget amounts to $472 per capita, and each individual's share of the national debt ($252,000,000,000) is $1,630.

With this heavy tax burden, he said, there are numerous tax inequalities; first, because of government going into competition with private business and, second, because some businesses under the guise of national defense are getting tax amortizations. The third, and most vicious type of tax inequality, he declared, is that found in cooperatives.

Pictures of the Carolinas crushers' convention will appear in the next issue.

• **Dr. Mitchell Speaks on Responsibility of the Press**—Final speaker was Dr. Nicholas P. Mitchell, associate editor of the *Greenville News*, Greenville, S. C., who emphasized the responsibility of the press in reporting events in today's confused economy.

• **Entertainment Is Varied**—Many entertainment features were made available to the attending delegates and guests. The annual golf tournament was held at the Princess Anne Country Club, a beautiful pine-tree lined course which gave players some difficult times. The ladies had a luncheon and game session on the first day at the Cavalier.

The annual convention banquet took place in the Panorama Room at the Cavalier Beach and Cabana Club. Following dinner Billy Beard gave a humorous talk, after which guests danced until midnight.

• **State Groups Hold Separate Business Sessions**—At the close of the last day's session the two state groups met separately to attend to their business affairs. Officers elected for the ensuing year are:

North Carolina Cottonseed Crushers Association—W. V. Westmoreland, Goldsboro, moved up to president to succeed Paul Keller, Clayton; J. D. Medlin, Maxton, named vice-president; and Mrs. M. U. Hogue, Raleigh, reelected secretary-treasurer.

South Carolina Cotton Seed Crushers' Association—R. M. Hughes, Greer, reelected president; and Mrs. Durrett L. Williams, Columbia, continued as secretary.

Honored for Long Service With USDA

THREE USDA EMPLOYEES with the Southern Regional Research Laboratory in New Orleans, La., were among USDA employees honored recently for 20 years of service. Presenting certificates and 20-year service pins to Dr. David Reid, chemist (left), James A. Kime, technical assistant to the director (second from left), and Dr. Francis H. Thurber, chemist (right), is Dr. C. H. Fisher, director of the laboratory. Thirty-five other laboratory staff members received 10-year service pins and certificates at a ceremony May 23.

Cotton Quality

(Continued from Page 24)

in the ginned lint, thereby adversely affecting the uniformity ratio. These short fibers make very little difference in turnout and are removed as waste at the spinning mill. In addition to short immature fibers, manufacturing waste, which is not unlike the material removed by the gin-moting system and lint cleaners, includes motes and leaf trash. The amount of waste varies with the quality of cotton being processed, but most mills expect it to amount to about 15 percent. This means that at the present rate of consumption, mills in this country will sell about 6,000 bales of waste per month for use in coarse yarns, mattress padding, upholstery material, and many other items where strength or appearance are not factors. Reductions in uniformity can generally be associated with reductions in staple length whether from overdrying or tight seed roll operation.

Ginners, in recent years, have heard neps discussed very frequently. However, there has been some misunderstanding as to cause and composition of neps. Neps must not be confused with the V-shaped tufts in a sample of gin-cut or rough-preparation cotton. A bale of cotton can be very neppy and not be discounted for rough preparation. A nep may be defined as a small knot of tangled fibers and is usually very small and not particularly noticeable except upon close observation. Neps do not occur in nature but are the result of handling and the manipulation of the fibers incident to cleaning, ginning, and processing in a mill. Some varieties of cotton nep more readily than do others. Also, dry weather and certain insect damage, as well as the too early application of defoliants for leaf shedding, will hinder the full development of the lint fibers and result in an increased tendency of the cotton to nep. Neps are objectionable because they cannot be removed from the lint and when the cotton is spun they cause weak spots and irregularities in the yarn. If the yarn is dyed, the neps do not absorb the dye uniformly and they show up in most instances as specks in the finished cloth. Excessive amounts of overhead machinery and tight seed roll operation will tend to cause neps in varying degrees. Spinning mill equipment, like gin machinery, will also cause neps. The use of too much cleaning machinery in mills is a well-known cause of nepping. Also, fast carding increases neps. Tests have shown that when cotton is carded at a rate of 6.5 pounds per hour only about 70 percent as many neps are produced as when a carding rate of 9.5 pounds per hour is used.[1]

The ginner is probably more conversant with grade than with any of the other factors that make up cotton quality. Grade, of course, is influenced by weather conditions and harvesting methods. The cleaning machinery in a modern gin will remove from 60 to 80 percent of the foreign matter from cotton but even at best this is an inadequate substitute for careful harvesting and handling practices. This is borne out by the fact that in 1930 about 62 percent of the crop was Middling and better in grade. In 1950 only 38 percent of the crop was Middling and better in grade, despite the fact that in 1930 there were no cotton driers, very little elaborate seed cotton cleaning machinery, and no lint cleaners used. In a modern gin at the present time, an effective drying system, the equivalent of 20 to 24 cylinders of cleaning, and a bur machine, followed by extractor feeders, are considered to be the maximum amount of seed cotton cleaning machinery advisable for use on roughly harvested cottons, if fiber damage is to be avoided. However, some gins in an effort to obtain high grades employ as much as 30 or more cylinders of cleaning. Usually, this excessive amount of equipment will result in economic losses for the ginner and the producer, as well as damage to the spinning quality of the cotton.

The advisability of loose roll operation has been brought to the attention of ginners on numerous occasions; therefore, it will not be discussed at length here. Fast rates of feed are associated with tight seed rolls and it is a well-known fact that tight rolls cause grade reductions due to rough preparation, lower the spinning quality of the cotton, principally in the form of decreased yarn strength and appearance grade, and increase the manufacturing losses. Also, the increased rate of flow through the seed cotton and lint cleaners, which is usually associated with tight roll operation, decreases the efficiency of the cleaning system. Tests have shown that the effectiveness of lint cleaners is nullified by a fast rate of feed (table 1). In other words, if a gin equipped with lint cleaners is fed at a fast rate, it will produce cotton of the same grade as that produced by a gin without lint cleaners but with the same amount of seed cotton cleaning machinery fed at a normal rate.

(Continued on Page 30)

[1] Summary of Fiber and Spinning Test Results for Cotton Varieties Grown by Selected Cotton Improvement Groups, Crop of 1950. U.S. Dept. Agr.

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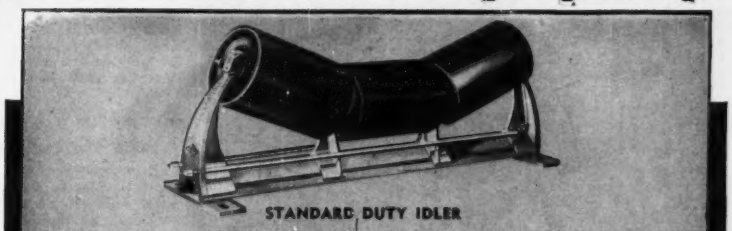

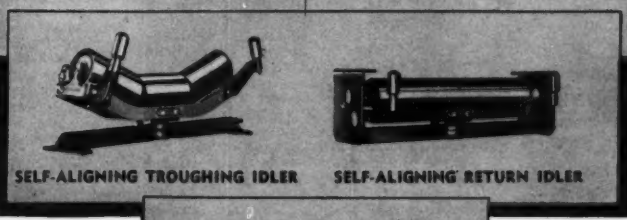

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The increased rates of feeding also cause increases in nep count and reductions in yarn appearance grade. Yarn strength is also adversely affected. These and other laboratory tests and field observations have shown clearly the importance of good operating practices. A modern, well-equipped gin improperly operated will at times yield lower quality cotton than that produced by a less modern plant which is maintained and operated properly.

The foregoing discussion covers only in broad terms some of the effects of the ginning processes on cotton quality. It is fortunate that many ginners are also farmers and, as such, they exercise some control over the condition of seed cotton brought to the gin. Gin machinery, like other mechanical equipment, has its limitations, and the condition of the seed cotton when brought to the gin is one of the major factors in determining cotton quality.

Good ginning and lint quality preservation are all the more important now that the merchants and spinners have more exact methods of appraising quality. As stated before, cotton merchandising firms and cotton mills in recent years have been increasing their use of scientific measurements to supplement grade and staple in choosing cotton to meet specific requirements and preferences. It is, therefore, increasingly advantageous for both the farmer and the ginner to endeavor to produce and maintain a high quality product in order to meet the demand for high quality fabrics.

• Cotton farmers are urged to make regular inspections of their fields of growing cotton for harmful insects.

Oilseed Production Drops in Belgium

The domestic production of vegetable oilseeds from the 1950 crop in Belgium amounted to only about 496,000 bushels of flaxseed and 3,050 short tons of rapeseed, somewhat less than during the two previous years, when the area devoted to these crops was larger. Yields also were below 1949, although considered about normal.

Production of oil in 1950 was reported by the Belgian Federation of Oil Manufacturers at 32,140 short tons of crude linseed oil and 50,222 tons of other crude oils. Refined oil production was said to total 80,264 tons, hydrogenated 22,656 tons, acid oils 10,704 tons and other oils 8,094 tons. Statistics are not available for comparison of the 1950 production with previous years.

Margarine production totaled 71,785 tons last year—slightly below 1949. The production of lard was exceptionally large, amounting to 11,270 tons. This was the largest output since the war and exceeded the prewar 1936-38 average of 10,830 tons. There were also 7,165 tons of beef tallow produced in Belgium during 1950. The production of oilcake was 61,395 tons from flaxseed and 81,975 tons from other oilseeds and nuts.

Last year net imports of vegetable oilseeds amounted to 208,760 tons, which in terms of oil content is estimated at about 67,000 tons. In addition net imports of oil, mostly crude oil, amounted to about 51,000 tons. Imports of oilseeds were smaller than the previous year but much larger than in 1948. Oil imports were larger than in 1949. Flaxseed was the principal imported seed, with soybeans, copra, peanuts and palm kernels following in the order named. Principal suppliers of oilseeds were Canada, the U.S., the Philippines, Belgian Congo, China and Mexico. Oil imports were mainly raw palm oil and peanut oil. Almost half of the 37,544 tons of vegetable oils exported during 1950 went to Western Germany. Oilseed exports were just below 2,000 tons, of which 43 percent was sent to France.

Belgian consumption of oil, not including linseed oil, may be estimated at about 100,000 tons in 1950. This estimate was made by deducting exports and a small quantity for stock adjustment from total availabilities. Consumption of linseed oil may be estimated at about 22,600 tons for 1950.

Paraguay's Cotton Crop Looks Better Now

Private sources now estimate the 1950-51 cotton crop in Paraguay at 47,000 bales (500 pounds gross weight), somewhat higher than the 37,000-bale crop forecast which was made several weeks ago following unusually heavy rainfall in February and March 1951.

The revised estimate takes into consideration improvement in the outlook for picking now in progress as result of a prolonged dry spell. It still represents about a 25-percent decrease from the 63,000 bales estimated earlier in the season. Production in 1949-50 totaled 66,000 bales.

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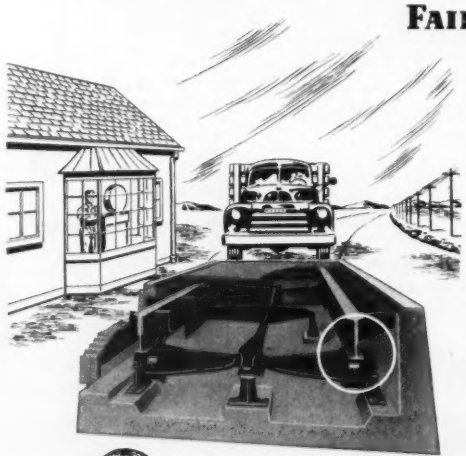

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French Morocco Depends on Imported Vegetable Oil

The French Zone of Morocco is largely dependent on outside sources for edible oilseeds and oils. Locally produced sunflower and safflower seed oil, along with a few other oilseeds of much lesser importance, probably yielded about 2,200 short tons of edible oils from the 1950 harvest, according to reports to USDA. Against this, the average annual consumption of refined edible oils in recent years has been around 20,000 tons, exclusive of olive oil.

During 1950, about 31,000 tons of oilseeds were imported, compared with some 50,000 tons in 1949. On the other hand, over 11,000 tons of vegetable oils were imported in 1950, compared with less than 9,000 tons in 1949. In addition, more than 5,000 tons of olive oil were imported during 1950, mainly from Tunisia, for use in the sardine canning industry. This unusual import also contributed to declining oilseed imports in 1950.

The vegetable oil industry of French Morocco includes eight oilseed crushing mills with an annual capacity of 150,000 tons. Two of these mills were constructed in 1949. There are six oil refineries with a capacity of 45,000 tons and the soap industry has a capacity of more than 20,000 tons. The crushing mills apparently are running at about 40 percent of capacity.

In the case of domestic oilseed production, all price supports have now been definitely abandoned, and the crushing mills will buy the 1951 crop directly from the producers at prevailing world prices, based on the tested oil content of the seeds offered. Moreover, government officials have stated privately that they do not intend to push local oilseed production, since it cannot hope to compete on the world markets without price supports.

Farmers are showing renewed interest in oilseed production as a result of high world prices, and this trend has been emphasized in northwestern Morocco by the severe winter floods, which prevented winter grain seedings and left land available for spring sowing of oilseeds, especially sunflower and safflower. A renewed interest in the cultivation of castor beans and peanuts has also been noted.

Madagascar Oilseed Outturn Increases in 1950

Madagascar peanut and tung seed production in 1950 amounted to 13,400 and 2,150 short tons, respectively, compared with 7,810 and 1,540 tons in 1949. Other oilseeds produced in Madagascar are castor beans, pulghere seed and copra, but 1950 acreage and production data are not yet available.

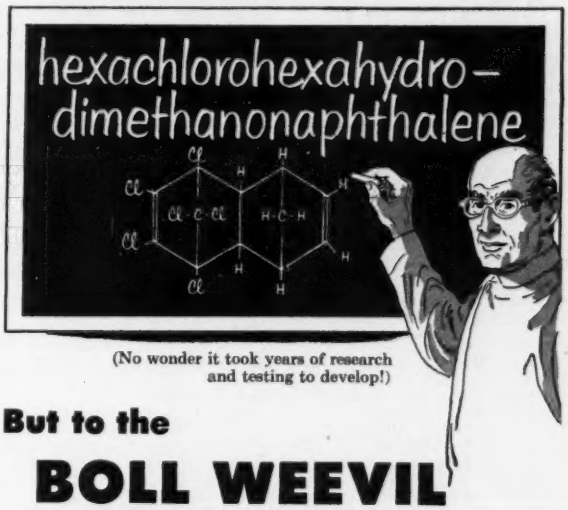
Castor beans are the only domestically produced oilseeds that are not locally processed. Of the other oilseeds, those not exported are used by the local oil and soap industry. The production of peanut oil is insufficient to meet local requirements and relatively large quantities of peanut and olive oil are imported from France, Senegal and North Africa.

Imports of vegetable oils and oilseeds into Madagascar in 1950 included 567 tons of peanut oil, 406 tons of olive oil, 74 tons of linseed oil, and 1,070 tons of unspecified refined vegetable oils.

Major exports in 1950 were 3,160 tons of castor beans, 415 tons of copra, 230 tons of pulghere seeds and 287 tons of tung oil.

To a chemist

aldrin *is*



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U. S. Agricultural

Exports Hold Level, Imports Set Record

United States agricultural exports in March 1951, the ninth month of fiscal year 1950-51, reached $329,977,000 in value, highest level of the current marketing year. During the same month last year agricultural exports were valued at $253,945,000.

The country's exports of all commodities, agricultural as well as nonagricultural, were valued at $1,261,373,000 during the month under review against $850,725,000 in March 1950. Agricultural products constituted 26 percent of the total compared with 30 percent during March last year.

On a value basis, cotton continued as the nation's most important agricultural export, shipments to foreign countries being valued at $83,458,000. This represented a reduction of 25 percent from the $111,059,000 worth exported during March a year ago.

On a quantitative basis, the outstanding features of the March 1951 agricultural exports, compared with March last year, were large increases in exports of tallow, peanuts, soybeans and oil, and other products. On the other hand, large quantitative reductions are revealed in exports of lard, cotton, and soybean flour, among other items.

Agricultural imports during March reached a value $536,799,000, the highest monthly figure for the past 20 years and probably an all-time peak to date. During March 1950 agricultural imports were valued at only $306,047,000.

The country's imports of all commodities, both agricultural and nonagricultural, amounted in value to $1,033,994,000 compared with $659,835,000 in March last year. Agricultural products constituted 52 percent of the monthly total compared with 46 percent during March a year ago.

On a quantitative basis, the outstanding features revealed by the March 1951 imports, compared with those for the same month a year ago, were the large increases in copra, coconut oil and palm oil. At the same time, however, the figures for the month under review reveal large quantitative reductions in imports of cotton and tung oil.

On balance, U.S. imports of agricultural products during the month of March 1951 exceeded the value of agricultural exports by $206,822,000. During the same month last year, agricultural imports exceeded exports in value by only $52,102,000.

U. S. Peanut Supply Is High, Crushing Lags This Year

The supply of peanuts, farmers' stock equivalent, held in commercial positions on April 30 totaled 648 million pounds, USDA's Bureau of Agricultural Economics has reported. This compares with holdings of 434 million pounds on April 30 last year.

Inventory of farmers' stock peanuts on April 30 totaled 443 million pounds, compared with 232 million pounds last year. Holdings of edible grade shelled peanuts, reported at 115 million pounds, were only slightly less than the 118 million pounds on hand April 30, 1950.

Farmers' stock peanuts cleaned, shelled and crushed totaled only 1,305 million pounds through April this year, the lowest for any season since 1941-42, and compares with 1,391 million pounds milled through April last year and 1,575 million pounds to the same date in 1949. This season's production of edible grade shelled peanuts totaled 535 million pounds to April 30 this year, compared with 522 million pounds to April 30 last year. Production of shelled oil stock, including No. 2's and ungraded peanuts diverted, was 293 million pounds through April compared with 403 million pounds to the same date last year.

Total disappearance of shelled peanuts, including shelled peanuts for crushing and export, was 727 million pounds through April, compared with 830 million pounds to the same date last year and 976 million two years ago. Compared with last season to date, the quantity of shelled peanuts reported used in candy is down seven percent but up 11 percent for salted peanuts and up eight percent for peanut butter.

Indonesian Copra Output Exceeds Estimates

Exports of copra from Indonesia during April 1951 totaled 23,853 long tons. Although production was forecast at only 31,500 tons during April, actual output amounted to 51,000 tons, with 44,000 tons produced in East Indonesia and 7,000 in West Borneo. Production and exports for May were forecast at 43,300 and 44,300 tons, respectively.

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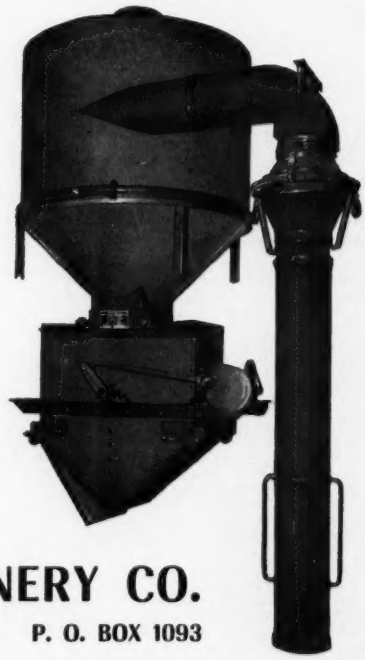
Designed for unloading peanuts, soy beans, grains, tung nuts and castor beans without breakage; it also handles cottonseed perfectly. It requires only 1/3 h.p. to operate, a considerable saving in power over the standard screw type discharge — power that can be used to increase unloading capacity.



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USDA Extends Pink Bollworm Quarantine in Four States

Cotton ginners and oil mill operators in 12 parishes in Louisiana, one county in New Mexico, four Oklahoma counties and 44 Texas counties will be required to sterilize, fumigate, or process their lint, linters and cottonseed before these products may move interstate from pink bollworm infested areas, under an amended quarantine order, effective May 29, announced by USDA.

Paralleling intrastate quarantines have already been adopted by the four states affected.

This new territory has been added to the pink bollworm regulated area because it was recently invaded by this destructive cotton pest, USDA declared. Conditions during the fall of 1949 were unfavorable for complete, early crop residue destruction throughout the infested area. This resulted in a heavy initial infestation over much of south Texas from larvae hibernating in old bolls, cotton stalks and trash. The year 1950 was a boom year for all cotton insects. From this beginning, the pink bollworm quickly spread north to invade a strip of territory between two known Texas infestations as well as several tiers of counties in Oklahoma, Texas and Louisiana east of the 1949 infested zones.

The pink bollworm now infests limited portions of Arizona, Louisiana, New Mexico, Oklahoma and Texas.

Compression, heat treatment, and methyl bromide fumigation are some of the requirements for treating cotton and cotton products to reduce the abundance of the pest within infested areas and to prevent its spread to uninfested sections.

A further change in the quarantine procedures conditionally exempts from the certification requirements 1½-pound samples of cotton lint and linters.

The parishes and counties included in the May 29 order are:

Louisiana: Parishes of Acadia, Allen, Beauregard, Calcasieu, Cameron, Evangeline, Iberia, Jefferson Davis, Lafayette, St. Landry, St. Martin and Vermilion.

New Mexico: Catron County.

Oklahoma: Counties of Comanche, Cotton, Jefferson and Stephens.

Texas: Counties of Archer, Austin, Bandera, Bastrop, Bell, Blanco, Bosque, Brazoria, Chambers, Clay, Colorado, Comal, Edwards, Falls, Fayette, Fort Bend, Gillespie, Hill, Hood, Jack, Jefferson, Johnson, Kendall, Kerr, Kimble, Kinney, Lavaca, Lee, Liberty, Limestone, Llano, McLennan, Milam, Orange, Palo Pinto, Parker, Real, Somervell, Stephens, Sutton, Travis, Val Verde, Williamson and Young.

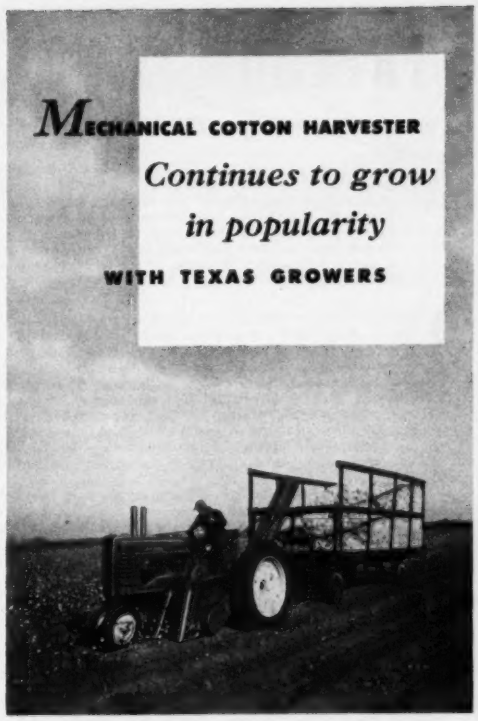
1951 Cash Receipts from Farm Marketings

• **Cash Receipts, January-May** — Cash receipts from farm marketings in the first five months of 1951 are estimated at 10.7 billion dollars, 17 percent more than in the corresponding period of 1950. Prices probably averaged about 30 percent above the first five months of 1950, but marketings were lower. Prices farmers paid for commodities used in production during the first four months averaged 14 percent higher than for the similar period last year.

Farmers received about 7.6 billion dollars from marketings of livestock and products in the five-month period, 25 percent more than last year. Prices probably averaged 31 percent higher than a year ago, but marketings were slightly lower. Receipts from meat animals, dairy products, poultry and eggs were all substantially greater than last year. Crop receipts totaled about 3.1 billion dollars, nearly the same as a year ago, with prices showing an average gain of 26 percent. Cotton, soybeans and truck crops were up noticeably but wheat, corn, tobacco and fruits were lower.

• **Cash Receipts in May**—Total receipts from marketings in May were around 2.2 billion dollars, seven percent more than in April and about 16 percent above the same month last year. The increase over April was due to larger marketings, but higher prices accounted for the gain over a year ago. Livestock receipts were about 1.6 billion dollars, eight percent above April because of larger marketings.

Crop receipts in May were around 0.5 billion dollars, about the same as in April, but 15 percent more than in May 1950. A slight decline in average prices was probably offset by larger marketings as compared with April of this year, but higher prices accounted for the gain over last May. Corn, flaxseed, soybeans, truck crops and fruits probably showed significant increases over April, with cotton, peanuts and potatoes down seasonally. The gain over last May arose mainly from increases in receipts from corn, cotton, soybeans and truck crops.



More and more cotton growers in Texas each year are harvesting their crop with the John Deere No. 15 Two-Row Cotton Harvester. It's just good business when they can reduce harvest costs by as much as $25 to $30 per bale over hand picking costs. These tremendous savings pay for the No. 15 in just a few days and the John Deere's simple design and rugged construction assure these savings over many years.

The John Deere Cotton Harvester does an excellent, once-over job in defoliated cotton that is suitable for mechanical harvesting. Much of the dirt and trash is separated; cotton grades as high as cotton hand-pulled at the same time.

The changeover to mechanical harvesting requires ginners to keep abreast of the times. Be sure you have the proper equipment to handle mechanically stripped cotton.

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FREEDOM IS NOT FREE

By STEPHEN PACE

■ THESE RINGING WORDS on freedom and what we must do to preserve it were spoken by the former Georgia congressman at the conclusion of his talk at the National Cottonseed Products Association convention held at Palm Beach, Florida, May 14-15. Men in high places in this country, he says, need to get back to these fundamentals: "With every right there is a duty; with every freedom, there is a corresponding obligation."—EDITOR.

I HAVE REAL CONCERN regarding the future of my country. Those fears arise from the present effort on the part of men in prominent places to cause the people to believe they should be supported by their Government. They speak only of the right to freedom, the right to jobs, the right to homes, the right to education, the right to have a voice in government, the right to equal justice, freedom of thought, freedom of expression, freedom of worship, freedom from want, freedom from fear—and on and on—but not one single word about the duties, the obligations or the responsibilities of citizenship—not one word of what men should do, not one word of what men must do, to earn these rights and preserve this freedom.

With every right, there is a duty; with every freedom, there is a corresponding obligation. It seems to me the time has come when those in high places should get back to these fundamentals. The performance of our duties and the fulfillment of our obligations come first. We should first earn our privileges before we enjoy them. For years, now, the people have been told of nothing but their rights; they have been reminded constantly of the freedom to which they are entitled, and today, my friends, there are millions of people in this country who have no understanding of their responsibilities of citizenship and have no resire or intention of assuming them.

We all cherish our rights and they must be protected. We all treasure our freedom and it must be vigilantly guarded. But these rights will not survive nor will this freedom long continue unless those who enjoy them daily perform the tasks required for their protection and preservation. They are not self-perpetuating. They can be kept by and rightly belong only to those who have the courage, the industry and the determination to guard and defend them. Those who claim the right to equal justice must first be just. Those who demand the right to a job must be ready to do an honest day's work. Those who demand a home must be willing to labor and pay for it. Those who would have a voice in government should contribute to its support and respect its laws. Those who would want to be free of want and fear must be ready to help the needy and refrain from any conduct which would bring fear or danger to others. Those who would enjoy freedom of opportunity must undergo, if necessary, the same hardships, the same dangers and the same trials as did the brave men who established here the greatest land of opportunity known to man. Yes, the land of opportunity—that is America. And as your sons fight on foreign soils to protect us from any enemies from without, let us fight here at home to preserve America from attack from within. As we sacrifice to make America strong, let us be vigilant to keep Americans free.

Egypt's Cottonseed Outturn Is Larger

Egyptian vegetable oilseed production in 1950 is estimated at 767,800 short tons compared with 636,000 tons in 1949.

Production of cottonseed amounted to 746,800 tons in 1950 and accounted for 97 percent of the total oilseed output for the year. This represents an increase of 24 percent from the 1949 outturn of 601,700 tons.

Production of other oilseeds in 1950 included 15,430 tons of peanuts, 3,860 tons of sesame seed and 1,650 tons of flaxseed. Peanut and sesame seed production dropped almost 2,750 and 8,820 tons, respectively, from last year. The fact that a large number of local sesame cultivators have switched to cotton growing for higher profits accounts for the reduction in the crop in the past two years.

Vegetable oil production in Egypt again consisted primarily of cottonseed oil. About 99,210 tons were produced in 1950 compared with 105,230 tons the year before. Only 495 tons of linseed oil and 1,870 tons of sesame seed oil were produced in 1950.

Current annual consumption of cottonseed oil in Egypt averages around 110,000 tons as compared to the prewar average of about 44,100 tons. Cottonseed cake consumption jumped from an almost insignificant quantity in the prewar years to around 400,000 tons last year.

Imports of oilseeds totaled 13,970 tons in 1950 against 14,470 tons in 1949. The Sudan accounted for about 92 percent of the 1950 imports, which consisted mostly of peanuts and sesame, the remainder being supplied by India, Hong Kong, Eritrea, Syria, Iraq and Turkey.

Exports of cottonseed oil in 1950 totaled 5,900 tons, a considerable increase from the 1949 shipments of 1,030 tons. According to official Egyptian statistics, cottonseed cake exports for 1950 reached 47,630 tons, with the United Kingdom receiving the largest quantity.

Cottonseed prices, which are fixed by the Egyptian government, ranged from the equivalent of $16.60 per short ton for Karnak seed to $22.21 for Zayora, Ashmouni and Giza strains in 1950.

Cotton acreage for 1951 has been considerably reduced by the government in order to increase the cultivation of cereals. The latest official estimate of the 1951 crop placed the output at about 8,384,000 cantars (415,220 tons) and created an atmosphere of anxiety among the oil pressing concerns. On the basis of this estimate, the 1951 cottonseed oil shortage is expected to reach 27,500 tons. It was reported, however, that large stocks of Sudanese cottonseed will be purchased by the government to meet expected demands.

Flaxseed production is expected to reach 2,200 tons in 1951 while forecasts place the sesame crop at about 50 percent lower than the 1950 level.

U. S. Cotton Exports Are Lower in March

Exports of cotton from the U.S. in March totaled 368,000 bales of 500 pounds gross (354,000 running bales), compared with 447,000 (429,000 running bales) in the previous month. The slower movement in March is attributed mainly to the suspension of most sales activity while the cotton exchanges were closed during Jan. 29 through March 7.

Exports of 3,062,000 bales (2,932,000 running bales) during August-March 1950-51 are 22 percent below the total of 3,909,000 (3,755,000 running bales) for a similar period in 1949-50.

Exports to European countries, amounting to 1,545,000 bales during the eight months under review, were 41 percent below the 2,641,000 bales for a similar period a year ago. Exports to other countries rose from 1,268,000 to 1,517,000 bales, an increase of 20 percent, due almost entirely to sharp increases in exports to Canada (not subject to export control) and to Japan.

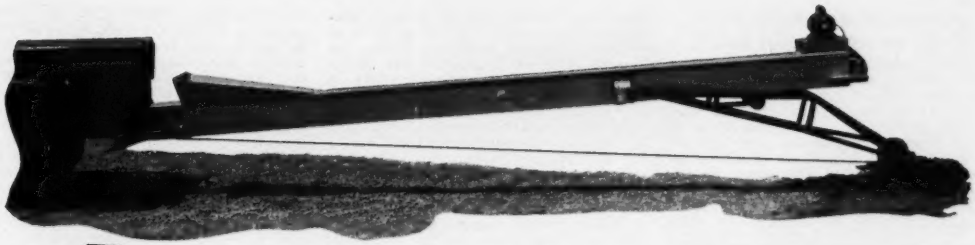
United States cotton export allocations now total 3,696,000 bales (500 pounds gross) including the 200,000 bales allocated on April 30. Adding an estimate of 425,000 bales for exports (not controlled) to Canada and 130,000 for exports prior to imposition of controls, to countries not receiving export allocations, it appears that total exports in 1950-51 will approximate 4,250,000 bales.

Licenses for exportation have been issued for all except 284,000 of the 3,696,000 bales allocated to date, according to a report released on May 16 by the Office of International Trade, Department of Commerce. Most of the remaining quantity is composed of cotton allocated on April 30 (200,000 bales) for which only a few licenses have yet been issued.

Young Heads Peanut Group

New president of the Southeastern Peanut Association is E. J. Young, manager of the Dawson Cotton Oil Company, Dawson, Ga. He was elected at the annual meeting of the association late in May.

• Taxes on Texas farm and ranch real estate in 1950 varied from an average of five cents per acre for the Trans-Pecos area to $3.41 per acre in the lower Rio Grande Valley.



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We manufacture a complete line of light portable conveyors for handling various products of agriculture, including cotton, cottonseed, corn (both ear and shelled), soy beans, etc. These we manufacture in cast aluminum, sheet aluminum and sheet steel construction. They can be furnished both with and without self-elevating under-carriages and with and without electric motors or gasoline engines. The model illustrated here is our Sepco No. 400 AHW 8″ wide x 22′ long (will handle a ton of cottonseed per minute), retracted for towing behind car, jeep, truck or tractor and elevated to 40 degrees. Please write us for literature, specifications and prices on other models.

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Research Investigations

(Continued from Page 18)

of Plant Industry, Soils and Agricultural Engineering especially with respect to the effect of soil types, fertilizers, and minor elements on the quantity and quality of the oil in the tung fruit. It was found, for example, that the oil content of the tung fruit could be increased, at least in some cases, by the application of potassium and by the inclusion of zinc in the fertilizer application (1,2).

Drying and Storage of Fruit and Seeds

• **Drying Fruit** — A decade ago, the proper drying of the tung fruit and seed for storage prior to milling was one of the major problems of the industry. Since the fruit contains about 65 percent moisture when it falls from the trees, it cannot be stored safely until it has dried to about 25 percent moisture. Under favorable weather conditions, the newly fallen fruit requires several weeks to dry in the orchard to 25 percent moisture, but in wet seasons, it will not dry sufficiently on the ground to permit storage without serious deterioration. A better method of drying was needed to permit the mills to start operating earlier and to accept wet fruit in case of necessity.

Numerous tests made in the laboratory and with pilot-plant drying equipment showed that the rapid artificial drying of the whole fruit was not economical in comparison with natural drying because of the cost of the equipment and the large quantity of heat and time required for the drying (3).

• **Drying Seed**—Dryers of several types, including direct-heat rotary, continuous horizontal, and even solar dryers, were tried in pilot plant experiments in which the temperatures ranged from 150-230° F. (4,5). It was found that the louver-type dryer operating at temperatures below 200° F. gave good results and was preferable to the other types of dryers tested. While these experiments were in progress, several mills built bin-type dryers in which hot air is drawn through a deep layer of seed for about 24 hours. These dryers were found to be somewhat unsatisfactory because the drying was not uniform and free fatty acids developed in the moist seed and kernel during the long drying period. Subsequently, several producers installed vertical louvered seed dryers in which warm air is drawn through a layer of seed 12 to 24 inches deep. Better yields of oil are obtained by keeping the temperature of the drying air below 160° F. and by drying the seed to a moisture content of 9 percent. The use of these vertical dryers has increased the capacity of the tung mill and the efficiency of oil expression.

• **Hulling Fruit**—It was found that the removal of the hulls before drying and storage decreased the heat required for drying because the hulls contain more than half the moisture of the fruit and have no value as a source of oil. The disc-type huller used in the processing mills removes not only the hull, but removes or breaks a large proportion of the shells and damages some of the kernels. Broken seeds when moist rapidly develop free fatty acids through a breakdown of the oil of the kernels and they heat spontaneously unless dried without delay. Experiments showed that the hulled seed after drying to 10 percent moisture at 165° F. can be stored for several months with little increase in the content of free fatty acids of the oil. The dried, hulled seed can be processed efficiently even after storage for several months (6,7).

In other studies it was found that considerable oil was lost in hulling very dry fruit with a disc huller through loss of kernel fragments in the hulls. The loss of oil in the case of fruit containing 15-20 percent moisture was small while fruit containing 30 percent or more moisture could not be hulled (8,9).

The industry soon appreciated the advantages of hulling the fruit on the farm and shipping only hulled seed to the mill. This practice not only decreases by about 50 percent the weight of material hauled to the mill, but leaves the hulls on the farm to be used as mulch and fertilizer. The hulls contain about 2.5 percent potash and small amounts of nitrogen and phosphorus. Studies on hulling fresh fruit were initiated at the U. S. Tung Oil Laboratory in Gainesville and were continued in cooperation with the U. S. Tillage Machinery Laboratory at Auburn, Ala. The portable drum-type huller developed from these studies was found to hull fruit containing between 30 and 45 percent moisture with little breakage of shells (4,10). Further tests showed that these moist hulled seed should be dried without delay, thus preventing deterioration from heating and sprouting of the seeds.

• **Storage of Fruit**—Occasionally, tung fruit has been stored at the mill until July or August of the year following its harvest, but it was found that such fruit could not be processed efficiently. Laboratory tests showed that changes occur

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in the kernels during long storage so that the meal prepared from them will not plasticize properly when heat and pressure is applied in the press (11). It was also found that when the old seed was mixed with seed from the current year, the processing difficulties were not experienced (12).

Mechanical Expression of Oil

The oil is expressed from the hulled, ground, and preheated kernels and seeds. This is done in a continuous press, which consists of a center shaft of interrupted screw construction within a cylinder of steel bars set close together. The screw moves the material forward against a restricted opening and pressure is built up between the cylinder and the center shaft. The expressed oil flows out through the fine openings between the bars and is pumped into a filter press and then into storage tanks. The meal residue is discharged in the form of a cake.

• **Meal Drying** — The "tempering bin" attached to the press at the first tung mill built in the United States removed about 4 percent moisture from the meal, while the "stack cooker" installed in later mills will reduce the moisture in the meal as much as 8 percent. The meal cooker and dryer attached to the latest type of continuous presses removes about 5 percent moisture from the meal. Because of the limited capacity of these devices for drying the meal, other methods of drying have been sought.

• **Expression of Oil**—Tests carried out with two models of continuous screw presses showed that the most efficient expression of oil is obtained when the ground meal entering the press contains 3-5 percent moisture (12).

Considerable difference of opinion existed in the industry regarding the amount of shell which should be left on the kernels to provide friction and drainage during expression of the oil. The disc-type huller removes about half the shell from the seeds while the drum-type huller leaves all or most of the shell intact. It is not feasible to remove additional shell prior to pressing if the intact seed from the drum-type huller are dried and stored. Tests made on a continuous screw press showed that meal containing all the shell (40 percent of the weignt of meal) processed as efficiently as that containing half the shell, while kernels completely freed of shell yielded a press cake very high in oil content (13).

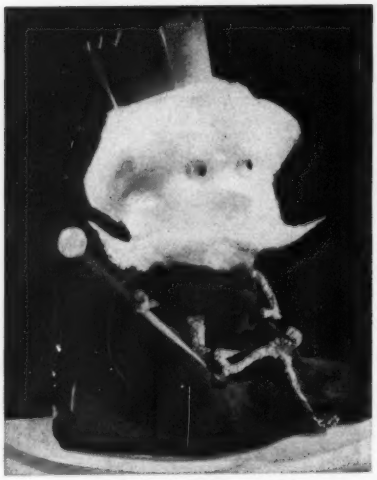
The filtration of crude tung oil produces a filter press cake which may contain 50 percent oil and amount to about 20 percent of the total expressed oil. To recover the oil from this filter cake it is customary either to add it to the ground meal entering the press or to allow it to accumulate and then mix it with expressed press cake and hulls and repress the mixture without the addition of ground meal. Neither practice is entirely satisfactory. In either case it is not possible to obtain a final press cake of low oil content.

The extraction of the oil from the filter press cake by means of petroleum solvents has been considered as a substitute for the present unsatisfactory expression methods. Laboratory tests showed that this method yields more than 98 percent of the oil in the cake (12). One mill has successfully applied solvent extraction to filter press cake for several seasons and in 1950 a second mill installed this process of recovery.

• **Storage of Oil**—During World War II, the supply of tung oil from China was materially reduced and eventually practically completely cut off, as a consequence of which the stocks in the United States were placed under allocation. It was found, in several cases, that domestic oil stored in small tanks exposed to the weather developed a layer of polymerized and oxidized oil several inches thick at the surface. Such layers did not form in large tanks or in protected tanks. Domestic oil stored in a large tank showed only a slight increase in acid value during a period of about two years. It retained a good color and showed no evidence of gel formation. Oil, sealed in well-filled cans which were painted black and exposed to weather, showed no measurable deterioration after storage for three years (14).

Solvent Extraction of Tung Oil

The scarcity of tung oil and its high price during the war years made it desirable to investigate the possibility of increasing processing yields by solvent extraction. Mechanical presses generally leave at least 3-4 percent oil in the cake and under very poor operating conditions as much as 10 percent has been found in the cake. In general, it was found that yields of oil have not been high using the mechanical process and losses of from 2 to 3 percent of oil on the basis of the total weight of the fruit have been common. It is obvious that it would be of considerable advantage to reduce the residual oil content of the meal below one percent provided this could be accomplished economically and with the recovery of an oil of good qual-



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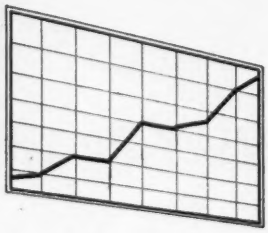

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ity. This has been accomplished on a large scale in the case of the soybean industry through the introduction of solvent-extraction methods.

Laboratory and pilot experiments have shown that it is feasible to solvent extract properly prepared tung meal and obtain good quality oil in yields superior to that obtained by mechanical methods of expression. The required process includes reducing the kernels to a medium fine meal with corrugated rolls, flaking the meal containing approximately 7 percent moisture content with smooth rolls, and immediate extraction with hexane or similar petroleum naphtha, filtration of the miscella, and distillation, preferably under vacuum, to recover the oil (15,16,17,18,19,20,21,22).

It was found that oils extracted with a cyclohexane solidified at room temperature, while oils extracted with normal hexane, normal heptane and trichloroethylene remained liquid at ice-box temperature. Spectrophotometric examination of each of these oils showed that the solvent-extracted oils which solidified at room temperature contained a relatively high percentage of the solid or beta-eleostearic glyceride, whereas the oils which remained liquid in the cold contained either none or only small amounts of this glyceride (20,21,22). It is probable that the cyclohexane used contained an impurity which catalyzed the inversion of the liquid oil to the solid form.

Sampling and Analysis

Tung fruit arriving at the mill is purchased on the basis of its oil content. Unfortunately, the amount of this constituent varies widely, thereby making the sampling and analysis a difficult problem. Studies on the sampling of tung fruit have shown that the oil content of the individual fruit varies from 0 to 28 percent. Therefore, to be representative and yield accurate values for oil content, a sample consisting of at least 100 fruit must be taken (23). This sample must be taken in such a manner that there will be a high probability that it will contain the different types of fruit in the same proportion in which they occur in the shipment. Procedures for sampling of fruit have been devised which when followed will result in obtaining an accurate evaluation of the entire lot (24).

As trained chemists are seldom available at the mills, it has been necessary to devise simple and rapid methods for testing tung fruit which can be applied by non-technical personnel. Fortunately, methods previously in use in other industries were found to be adaptable. In one procedure for determining the moisture content, the terminals of a small ohmmeter are inserted into holes in the fruit one inch apart and the electrical resistance to the passage of a small direct current is read. The moisture content is then estimated from an electrical resistance moisture curve (25). In a second method, a large volume of air at 260° F. is blown for 15 minutes through a vessel containing a sample of ground fruit to remove the moisture (26). In this procedure, a correction of 1.2 percent must be added to the percentage of moisture obtained because of the addition of oxygen to the sample during drying.

In one rapid method for determining the oil content of the kernels at the mill, a weighed portion of ground kernels is reground with a weighed portion of a relatively non-volatile solvent (1,1,2,2-tetrabromoethane) and the percentage of oil is estimated from the density of the oil-solvent mixture (27). The percentage of oil in the fruit or seed is then calculated from the percentage of oil in the kernels and the percentage of kernels in the fruit or seed. This method was used to some extent in selecting seeds for propagation.

A second method is based on the correlation existing between the oil content of fruit and its content of kernels (28,29). In this method, the percentage of dry kernels in a sample of fruit is determined and this value multiplied by 65 which is the average oil content of the dry kernels. The exact value may vary considerably from this figure, therefore it is preferable to determine the actual oil content of the kernels for the given locality and multiply by this value instead of 65.

The first method developed by the U. S. Tung Oil Laboratory for the analysis of tung fruit involves the separation of the sample into its components, namely hulls, shells, and kernels, and determining the percentage of oil in the kernels. The percentage of oil in the whole fruit is then calculated from the percentage of kernels and the percentage of oil in the kernels (30). A committee of the American Oil Chemists' Society investigating the analysis of tung fruit by this method found considerable variation in the percentages of moisture and oil, when using subsamples of 8 and 25 fruit, respectively. On the basis of an earlier study, these variations were attributed almost entirely to errors in sampling

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(23,24,31), therefore, it appeared that the desired accuracy could be obtained only by using a much larger sample. This alternative introduced the problem of excessive manual labor required for hulling and shelling the larger samples.

A new procedure, known as the "whole fruit method," was subsequently developed for the analysis of tung fruit. In this method hulling and shelling was eliminated and a much larger sample could be used. In this procedure, a sample of at least 200 fruit is ground in a Wiley mill equipped with a ¼-inch screen and the ground material is thoroughly mixed and subdivided into two portions, one portion being used for determining moisture and the other for determining the oil content. The moisture content of the fruit is then determined by drying a 5-gram portion of the ground sample to constant weight in a forced-draft oven at 101° C. The portion used for the oil determination is reground to a fine meal in a Bauer mill and a 5-gram portion is extracted with petroleum naphtha for four hours in a Butt-type extraction apparatus. The oil content of the fruit is calculated to the original moisture basis (32). Good agreement for the oil content of samples analyzed by this procedure was obtained by the subcommittee for the Analysis of Tung Fruit and Meal, American Oil Chemists' Society, and it has since been adopted as a tentative method of the Society. It was also used by Commodity Credit Corporation in the operation of its purchase and loan contracts. Commercial laboratories have preferred this method, but they will use the component method upon request (31,33,-34).

Chemistry of Tung Oil

Tung oil has been found to be composed of about 80 percent of eleostearic acid, $C_{18}H_{30}O_2$, with smaller proportions of other acids combined as glycerides. Each molecule of eleostearic acid contains three double bonds in conjugated positions with only a single bond connecting the carbon atoms between each double bond (9:10,11:12,13:14-octadecatrienoic acid). This arrangement of double bonds gives tung oil its unusual characteristics, such as its ability to thicken or polymerize to a viscous material when heated to 282° C. for a few minutes. The Browne heat test to determine the quality of tung oil is based upon this phenomenon (35).

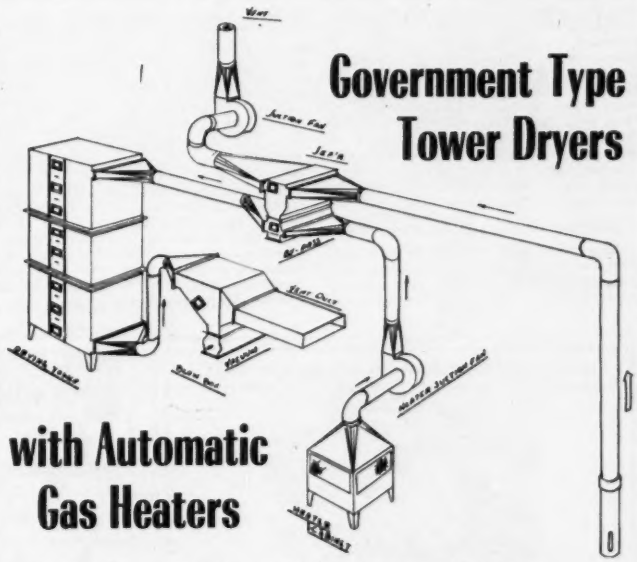
There are theoretically eight geometric isomers or forms of eleostearic acid probably depending upon the stereo or spatial arrangement of the various double bonds. One of these forms, generally designated as "alpha," occurs naturally, whereas one or more other solid forms designated as "beta" can be produced by various treatments of the alpha form. The alpha and beta forms are quite similar in a number of their properties, but it has been possible by spectrophotometry to determine the proportions of the two in tung oil (36,22). For example, an oil containing 3.7 percent of beta-eleostearic acid was found to be liquid at ice-box temperature while another oil containing 17.7 percent of the beta-acid was liquid at room temperature but deposited crystals at 40° F. Oil containing 37.1 percent of the beta-acid was almost completely solid at room temperature (22).

The presence in tung oil of so-called conjugated double bonds imparts to it the highest refractive index of any commercial vegetable oil. Therefore, to insure delivery of high quality, unadulterated oil, a value for its refractive index is included in the specifications. In addition, the refractive dispersion, measured with monochromatic light at 5890 and 4358 angstroms, is much higher for tung oil than for any other common vegetable oil and provides a means for determining its purity (37).

It was found that the usual lead salt-solvent methods, applicable to most other oils, could not be used to separate the saturated and unsaturated acids in tung oil because the lead salts of eleostearic acid are only slightly soluble in alcohol or ether. Eleostearic acid reacts with maleic anhydride to form an insoluble compound, therefore, by measuring the amount of maleic anhydride that will react with a sample of this oil, the content of this acid can be determined and adulteration with other vegetable oils can be detected (36,38).

Utilization of Tung Oil in Paints and Varnishes

The Chinese have produced and used tung oil for centuries, but it was not until the beginning of the twentieth century that Americans learned how to make use of its unique properties to produce water- and chemically-resistant surface coatings. The widespread use of tung oil in varnishes began in 1907 when it was found possible to make varnishes with the heat-treated oil and resin esters and limed rosin which were equal to or superior to the old-style varnishes made with linseed oil and imported fossil resins. About 20 years later, it became possible to produce fast-drying varnishes using tung oil and the new synthetic resins which led to a marked increase in the consumption of tung oil in this country. Since that time, more than 80 per-



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cent of the tung oil consumed in the United States has been utilized by the protective and decorative coating industry.

It has been found that special care must be employed in bodying tung oil and in the preparation of tung oil varnishes. "Gas proofness" in such a varnish is evidence that it has been properly cooked or bodied so that it will dry to a smooth film even in the presence of air or gas fumes. Temperatures of about 550° F. are required to fully "gas-proof" tung oil, but at this temperature it will set to a gel in a few minutes. However, a mixture of 60 percent soybean oil and 40 percent tung oil can be heat-bodied at this temperature to yield a product having drying properties similar to that of bodied linseed oil.

Tung oil varnishes have been found to have many desirable characteristics, such as rapid drying, hardness of film, durability, and resistance to water and alkali. In addition, commercial varnishes should have other properties such as clearness, proper viscosity (1.00 to 1.25 poises), nonskinning, and gas-proofness to be acceptable to the trade. Studies with unmodified phenolic, modified phenolic, ester gum, and pentaerythritol ester varnishes made with tung oil have shown that the addition of linseed or soybean oil to the formula was advisable in many cases to obtain "gas proof" varnishes which were clear, non-skinning, and of satisfactory viscosity (39).

Utilization of Tung Press Cake Meal

Tung press cake, one of the principal byproducts of tung oil expression, contains about 27 percent of crude protein but it has been found unsuitable for use in livestock feed. Investigations have shown that the commercial press cake is toxic and unpalatable to rats and to young chicks. It appears possible to reduce the toxic action of tung meal by extracting it with petroleum naphtha followed by heating in an autoclave at 230° C. for two hours (40,41,42).

Investigations on the preparation of plastics containing tung meal and press cake have shown that molded objects of good appearance can be prepared by substituting these materials for other common fillers in phenolic plastics, but they were found to absorb excessive amounts of moisture when immersed in water. Better products were prepared by using the crude protein extracted from ground kernels with a dilute solution of caustic soda (41). Good products were also obtained using 25 percent of a phenolic resin molding powder in formulas containing press cake meal and wood flour by pressing the mixture for 5 minutes at high pressures and 175° C. None of these products was sufficiently superior to those made from other similar materials to warrant commercial production.

Utilization of Tung Hulls

Tung hulls, which constitute about 50 percent of the fruit, have been found useful as a mulch in the groves and as a conditioner in mixed fertilizers. The use of hulls in commercial fertilizers has been limited by difficulties resulting from spontaneous heating during transit and in storage. Investigations have shown that hulls containing less than 19 percent moisture will not heat, but above this moisture content they will heat spontaneously and the heating will be accelerated and prolonged by aeration.

Analysis has shown that hulls containing 12.3 percent moisture have a calorific value of 7,160 B.t.u. They have been used as fuel at the mills and the resultant ash has been sold for its potash content. It has been found that hulls from ripe fruit contain between 2-10 percent of a tannin-like material, but aqueous extracts had no tanning effect on hides. Other tests have shown that the hulls from green fruit contain about 67 mg. of ascorbic acid (Vitamin C) per 100 grams of moist hulls. Hulls from ripe fruit are much lower in this vitamin.

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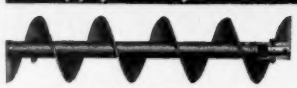

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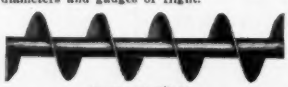

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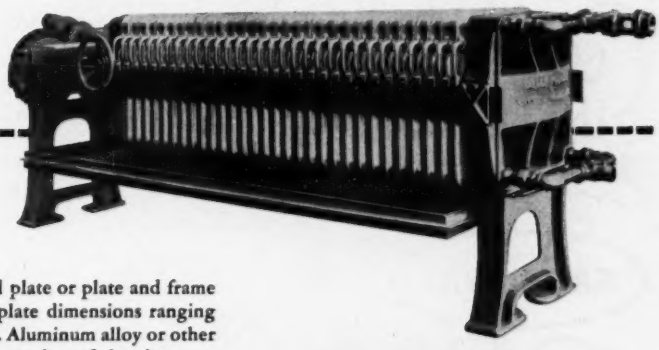

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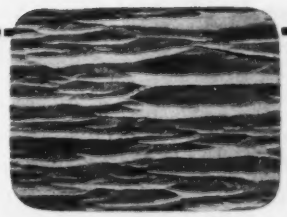

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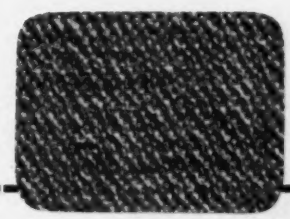

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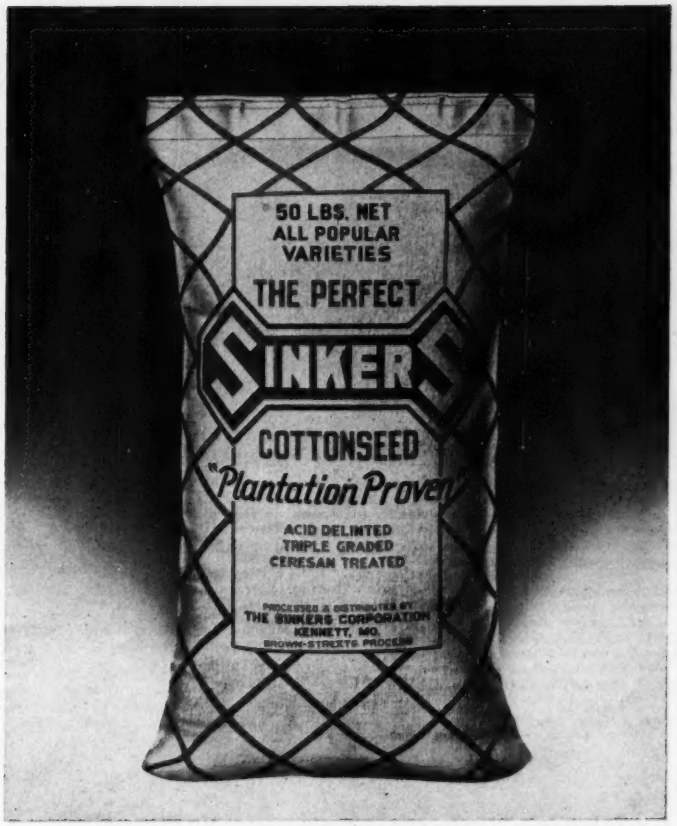
India Increases Cotton Acreage and Acre-Yield

Official estimates of the 1950-51 cotton production in India have not been released, but estimates by the Indian Central Cotton Committee range between 2,625,000 and 2,700,000 bales, or 12 to 15 percent above the 2,350,000 bales produced in the previous season.

The area in cotton increased about eight percent, from 12 million acres in 1949-50 to 13 million acres during the current season, while the estimated yields of almost 100 pounds of lint cotton per acre during 1950-51 are slightly above the 96 pounds per acre reported in 1949-50.



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■ UPPER LEFT—Pictured in a moment of relaxation at the Oklahoma crushers' meeting are, l. to r., Shawnee Brown, director, Oklahoma Extension Service, Stillwater; J. D. Fleming, secretary-treasurer, Oklahoma Cottonseed Crushers' Association, Oklahoma City; Ed Oswalt, superintendent, Oklahoma Cotton Research Station, Chickasha.

■ UPPER CENTER—In the same order, John F. Moloney, National Cottonseed Products Association economist, Memphis, Tenn.; Amos L. Kobs, Elk City, new president of the Oklahoma association; A. L. Ward, NCPA Educational Service director, Dallas; Jim Roberts, Southwestern Cotton Oil Co., Oklahoma City; Garlon Harper, NCPA Western field representative, Dallas; and Ivan J. Campbell, editor, The Cotton Gin and Oil Mill Press, Dallas.

■ UPPER RIGHT—Blake Britain, Tulsa Cotton Oil Mill, Tulsa, left, chats with Dr. Louis E. Hawkins, vice-director, Oklahoma Experiment Station, Stillwater, center, and Joe Briscoe, Chickasha Cotton Oil Co., Chickasha.

■ LOWER LEFT—L. to r., G. N. Irish, retiring president of the Oklahoma association, Muskogee; W. C. Smith, Wichita Falls Cotton Oil Mill, Wichita Falls, Texas; R. M. Lucas, Chickasha Cotton Oil Co., Chickasha; and Les Althauser, Procter & Gamble Manufacturing Co., Dallas.

■ LOWER CENTER—Some of the ladies who attended the ladies' luncheon on the first day of the convention.

■ LOWER RIGHT—Shuffleboard was the entertainment chosen by, l. to r., Marvin Slack, Anadarko Cotton Oil Mill, Anadarko, and C. E. (Casey) Jones, Tulsa Cotton Oil Mill, Tulsa. One speaker, Jack Criswell, National Cotton Council, is not pictured.

At Annual Convention —

Oklahoma Crushers Are Optimistic

■ Amos L. Kobs is advanced to president of association; J. S. Morrison is named vice-president.

The most optimistic outlook for cotton in many years was reflected by members of the Oklahoma cottonseed crushing industry at the forty-second annual meeting of their association held June 4-5 at beautiful Lake Murray Lodge near Ardmore.

Speaking to the crushers at the opening session, Dr. Louis E. Hawkins, vice-director of the Oklahoma Agricultural Experiment Station, said of the 1951 crop that one "could hardly ask for a more optimistic outlook than exists at the present time." Total acreage planted to the crop is not known exactly, he pointed out, but the average of all guesses so far made is in excess of two million acres, the largest acreage in many years.

J. D. Fleming, recently named secretary-treasurer of the association, succeeding the late Horace Hayden, predicted that Oklahoma will plant an additional half million acres to cotton in 1952 provided, of course, there are no limitations on acreage. He pointed out that growers are prepared this year to take advantage of every approved method of producing a big crop, including the control of cotton insects.

Dr. Hawkins said that, barring further spread of the war, the state should experience no serious labor difficulties in producing the 1951 crop.

Oklahoma's comeback in cotton production and the educational phases of the program now being carried forward to give cotton its proper place in balanced farming were discussed by Shawnee Brown, director of Oklahoma's Extension Service. He emphasized the need for an accelerated effort to produce more planting seed of the approved varieties for the state and told the crushers of plans for mechanization and insect control demonstrations this year.

Every speaker at the opening session paid tribute to the strong state and national leadership provided the ginners and crushers of Oklahoma by Horace Hayden. G. N. Irish of Muskogee, retiring president of the association, praised the late secretary-treasurer of the organization in his opening remarks to the convention and asked the delegates to stand in silent tribute to the man whose strong leadership and unwavering faith in cotton did so much to put the crop back on its feet in Oklahoma.

The first day's session closed with a talk by John F. Moloney, economist for the National Cottonseed Products Association, Memphis, on the operation of business in a controlled economy. He reviewed the action of the NCPA at its recent Palm Beach convention in asking that the price control sections of the Defense Production Act be allowed to expire. He asserted that the crushing industry favors inflation control but not

through price ceilings, which "deal only with symptoms and not with the basic causes of inflation."

On the second day of the convention the delegates heard A. L. Ward of Dallas, director of the NCPA's Educational Service, who praised the "intelligent and vigorous fight" that Oklahomans are making to return cotton to a position of importance in their state. Using Europe as an example of an area which does not produce cotton but which buys slab cake and grinds it for livestock feeding, he told the crushers that a small cotton crop should not stop them from continuing to serve their territory by getting oilseed proteins elsewhere and processing and selling them to their customers. Mr. Ward also reviewed research work which is being done on methods of using cottonseed meal and other products as feed for swine and poultry.

Final speaker was Jack Criswell, Memphis, educational specialist of the National Cotton Council, who gave the crushers a preview of the 1951 Council-sponsored Cotton Mechanization Conference to be held Nov. 8-9 at the Oklahoma Cotton Research Station at Chickasha. He reported that plans for the conference are rapidly taking shape and that the Council expects the 1951 affair to match if not exceed any held in the past.

At the election of officers, held the second day, Amos L. Kobs, Elk City, was elevated from vice-president to president of the association, suceeding G. N. Irish, Muskogee. Succeeding Mr. Kobs as vice-president is J. S. Morrison, Chickasha.

Highlight of the entertainment program was the annual dinner-dance the evening of the opening day.

Scott Is Bemis Manager

New manager of the Chicago general sales division of Bemis Bro. Bag Co. is R. V. Scott, formerly with the company's branch in Buffalo, N. Y. He succeeds the late Harvey W. Clements.

Reorganization Voted by

Arkansas-Missouri Ginners' Group

■ J. P. Ross heads association, J. E. Teaford is named vice-president at Hot Springs convention.

A complete reorganization of the Arkansas-Missouri Ginners Association was voted by the board of directors and adopted by the membership at the organization's thirty-fourth annual convention in Hot Springs, Ark., June 4-5.

J. P. Ross, Essex, Mo., was elected president of the association, succeeding Sidney C. Mack, Newport, Ark. New vice-president is J. E. Teaford, Luxora, Ark., who follows S. Crews Reynolds, Caruthersville, Mo., into office.

• **Reorganization to Give More Service**—Believing that an association organized into working districts with a full-time secretary in a central location would be of more value to the members, the association adopted recommendations of the directors to (1) employ a full-time executive secretary; (2) divide the two states into districts according to the number of bales ginned, with directors elected from the districts; (3) move the association office to Blytheville, Ark.; and (4) increase dues from one cent to two cents per bale.

A committee will report on selection of a full-time secretary within the next 30 days. J. Warren Karsten, Jr., Kennett, Mo., has been serving as executive vice-president and secretary-treasurer. Part of the secretary's duties under the new plan of operation will be to inform the membership of government directives and, where possible, to interpret them as they apply to the ginners.

• **Inflation Is Chief Topic**—Three of the four speakers on the opening day's program June 4 discussed inflation and the means of halting it. They were President Mack, in his annual report; Kemper Bruton, National Cotton Council, Memphis, Tenn.; and John C. Lee, vice-president of the New York Cotton Exchange who was being elected president of that organization while he was in Hot Springs.

Pointing out that planned economies and price ceilings have, since the first recorded version by the Hittites in 1350 B.C., always ended in inflation and the collapse of the economy involved, President Mack cited the efforts to control prices by the Continental Congress during the American Revolution. Those efforts, he pointed out, ended with the adoption of this resolution: "It has been found by experience that limitation in the price of commodities is not only ineffective for the purpose proposed, but likewise is productive of very evil consequences to the great detriment of the public service and grievous oppression of individuals."

Price controls are cheating the consumer, he declared, by making it appear that something is being done to halt inflation when the controls themselves are the greatest cause of inflation because they throttle production when production is necessary to prevent inflation.

Outlining the work of the National Cotton Council, Mr. Bruton said that apathy of the public, not bureaucrats in Washington, is responsible for the trend toward socialism in this country. He warned that greater interest in local and national affairs is necessary to keep lawmakers on the path of public welfare.

Mr. Lee cited the need for the futures market as a means of pricing and marketing cotton and reviewed the difficulties imposed on the trade by price ceilings on cotton.

If the present system of cotton merchandising should "break down as a result of the unrealistic price ceilings," he declared, "it can be seen that the daily market for all qualities which the producer has enjoyed cannot function and the producer will suffer accordingly. A step further along this line of thinking can only lead to the thought of the government taking over the entire cotton business."

Mr. Lee reminded the ginners that "one has only to look at the cotton industry in England to see that it has happened there."

• **Bennett Discusses Ginning of Mechanically-Harvested Cotton**—Delivering the only technical paper of the session, Charles A. Bennett, regional engineer, USDA Cotton Ginning Investigations, Stoneville, Miss., stressed that mechanization of the cotton industry must come and that better harvesting and better ginning methods must be developed to eliminate the excessive trash that comes with mass harvesting, either by machinery or by hand stripping methods.

• **Stilley Discusses Association Work**—Speaking at the final session on "The Importance of Cotton Associations," Jay C. Stilley, executive vice-president of the Texas Cotton Ginners' Association, Dallas, described the operations of his organization.

Only entertainment feature of the convention was the annual banquet and dance on the evening of June 4. Art Briese, humorist, entertained the ginners and their guests after the banquet.

Pictures of the Arkansas-Missouri ginners' convention will appear in the next issue.

After the NCPA Convention!

JUST TO SHOW what happened to some of the people at the National Cottonseed Products Association convention in Palm Beach, Fla., after the convention ended, this picture is printed. Reputedly taken at "Sloppy Joe's," somewhere in Cuba, it shows, left to right, standing: Harris M. Donaldson, Brumley-Donaldson Co., Oakland, Calif.; W. D. Griffin, Producers Cotton Oil Co., Fresno, Calif.; Charlie Piercey, S. A. Camp Cotton Oil Co., Cawelo, Calif.; Mrs. Piercey; W. A. Swan, Lilienthal, Lee & Co., San Francisco, Calif.; Mrs. Swan; Mrs. Griffin; and Mrs. Donaldson. Seated in front are Mr. and Mrs. Jack W. Pillow, Jack W. Pillow Co., Memphis, Tenn.

Ruidosa Is Site of

New Mexico Ginners' Meeting June 18-19

■ **Business sessions are planned so that plenty of time is left free for entertainment at resort headquarters.**

Plans for the second annual meeting of the New Mexico Cotton Ginners Association June 18-19 are almost complete, President Winston Lovelace has announced, with several specialists in cotton production and ginning research scheduled to speak. The meeting will be held at Navajo Lodge, Ruidosa, N. M.

Business sessions have been scheduled for the two mornings of the convention, Mr. Lovelace said, so that those attending can have the afternoons free for recreation.

• **First-Day Business Program**—President Lovelace will call the meeting to order at 9 a.m. June 18. Following the reports of the president and the secretary-treasurer, Mrs. Flora R. Lawrence, three USDA experts will discuss the phases of cotton handling in which they work. They are Victor L. Stedronsky, engineer in charge of the U.S. Cotton Ginning Laboratory, Mesilla Park, N. M.; Stanley C. Rademaker, in charge, U.S. Cotton Classing Office, El Paso, Texas; and William H. Fortenberry, fibre specialist, U.S. Cotton Fibre Laboratory, Mesilla Park.

Directors of the association will be elected before the session is adjourned for the day.

• **Second-Day Speakers**—Dr. Lester M. Blank, pathologist, New Mexico A. & M. College, State College, N. M., and Dr. A. M. Smith, agronomist, Mathieson Chemical Corp., Houston, Texas, are two of the speakers slated for the business session June 19.

Also on the program for the final day are Jay C. Stilley, executive vice-president, Texas Cotton Ginners' Association, Dallas, Texas; and Clifton Kirkpatrick, director of field service, National Cotton Council, Memphis, Tenn.

Two or three other speakers are tentatively scheduled for the New Mexico meeting, President Lovelace said, but do not yet know definitely that they can attend.

The board of directors will report on the election of officers.

• **Entertainment**—No formal entertainment has been planned by the association, Mr. Lovelace said, but there are several sports available at the convention site, including golf, resort entertainment, saddle horses and mountain drives.

Although no machinery exhibits are planned for the meeting, Mr. Lovelace has invited machinery manufacturers or representatives, as well as anyone else interested, to attend.

• **Officers**—Officers of the New Mexico Cotton Ginners Association are Winston Lovelace, Loving, president; J. B. Greer, La Union, vice-president; and Mrs. Flora R. Lawrence, Loving, secretary-treasurer.

Heads Produce Exchange

JULES M. SALMANOWITZ, president of Superintendence Co., service organization which supervises the movement of commodities, was elected president of the New York Produce Exchange at the ninetieth annual election held June 4. Other officers are Axel Hansen of Isbrandtsen Co., vice-president, and J. A. MacNair of H. J. Greenbank & Co., re-elected treasurer.

• Electricity reached 95 percent of Georgia's farms in 1950, rural electrification experts point out.

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FOR SALE—Oil mill equipment including Anderson expellers and French screw presses.—Pittock and Associates, Glen Riddle, Pa.

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FOR SALE—Anderson RB expeller. California Extraction Co., Box 187, Norwalk, Calif.

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FOR SALE—One Mitchell 6-cylinder Jembo, combination extractor, drier, and cleaner. 4-80 Continental model "C" A.B., D.C. air blast gin with model "30" fronts lint flue. One 4-cylinder 52" steel Stacy cleaner. Five 60", 1939 model flat belt convertible Mitchells. Four 66" cast-iron head standard Mitchells. One 10', 6-cylinder, all-steel after cleaner. Three 14' Hardwicke-Etter wood bur machines with by-pass conveyors. One American steam hydraulic pump. 5-80 Continental L.S. and A.B. model "F-3" gins with roll indicators, factory rebuilt and painted at the Continental Gin Co., Dallas, with lint flue. Two 45" Continental cast-iron fans, reworked and repainted. Two steel bound Continental Paragon presses with channel iron side supports, square center column, center crank door opener, and counter-balanced doors. One Murray tramper. Five 60" Hardwicke-Etter huller feeders. Two 10' Hardwicke-Etter wood bur machines. Two Continental vacuum boxes. Six 80-saw A.B., D.C., all-steel Cen-Tennial commandor gins with lint flue. Four 80-D.C. model "C" Continental brush gins. Five 80-saw Murray gins with glass fronts and 6" mote conveyor, lint flue. One 72" Continental impact cleaner with steel supports. One Continental triplex automatic oiling pump. One 16-unit Lummus thermo cleaner. One 10-unit Lummus thermo cleaner. 5-80 D.C. Lummus steel gins in good condition with lint flue, conveyors, etc. One 50" Lummus multi-blade fan. One five row Mitchell steam radiator and one 15 row steam radiator, both in good condition.—Bill Smith, Abilene, Texas, Box 694. Phones 4-9626 and 4-7847.

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FOR SALE—One 4-80 or 5-80 saw Murray gin with glass front gins, Mitchell super units, after-cleaners and super-jems. Murray single conveyor distributor, Murray steel-bound up-packing press complete. In good condition—Mitchell equipment two years old. Priced to sell.—W. L. Gladish, Box 360 Lawrenceburg, Tenn.

FOR SALE—4 80 Continental all metal direct connected ball bearing brush gin outfit, up-packing all steel press, extractors, seed scales and electric motor. In good mechanical condition. Must be moved within 90 days. For quick sale $10,000.—James C. Mann, Tel. 4931 Convers, Ga.

FOR SALE—60-saw Continental B. B. Wood mattress gin with hopper. Practically new. In first-class operating condition. Will take cotton or linters in trade instead of cash if preferred.—Sealy Mattress Company, 3841 East 37th St., Cleveland 15, Ohio.

FOR SALE—5-80 Murray gins—new type—glass fronts 6 in. mote conveyor automatic dump rolls —45" air blast fan with Mitchell Rots filter— lint flue complete to riser—new saw cylinder with bearings—all in good shape.—County Line Gin, Rt. 2, Morton, Texas.

FOR SALE—Four 80-saw model C Continental Pratt gins with drum feeders. Saws and brushes have just been used one season, 1950. One wood construcfion press, lint flues, shafting and pulleys. One CGC 100 h.p. diesel engine, model C, type A in good condition.—Malone Gin Co., Malone, Fla.

FOR SALE—Five Gullett A.B. gins (all steel). Five Continental double X extractor feeders. One 72" steel down discharge Gullett condenser. One RAL all steel separator (Gullett). One Gullett 6-drum horizontal cleaner, all steeel. These items are all in good condition and can be bought very reasonable.—W. I. Payne Estate, Sherrill, Ark.

• A single cotton harvester can do the work of 40 to 50 men.

ELECTRIC MOTORS
Sales — Repairs

To better serve the Southwest cotton industry we now pick up and deliver **FREE** any equipment for sale or repair. Don't be shut down! Call us and we will deliver a loan motor to your plant free while we repair your equipment in our shop.

To further our aim to give fast and dependable service, we have established a motor repair shop at Harlingen, Texas.

Take advantage of factory-trained men, large copper wire availability, expert machinists, accurate balancing and testing equipment. Our facilities are as close as your telephone, and no more expensive than if done in your city.

Partial list of motors we have for immediate delivery:

1—300 hp. 3/60/2300/600 rpm, slip ring
1—250 hp. 3/60/440/600 rpm, slip ring
4—200 hp. 3/60/2200/900 rpm, slip ring
6—200 hp. 3/60/440/900 rpm, slip ring
4—150 hp. 3/60/2300/900 rpm, slip ring
2—150 hp. 3/60/440/900 rpm, slip ring
3—125 hp. 3/60/440/900 rpm, slip ring
2—125 hp. 3/60/2200/900 rpm, squirrel cage
2—125 hp. 3/60/440/900 rpm, slip ring
1—100 hp. 3/60/2200/900 rpm, squirrel cage
2—100 hp. 3/60/220/900 rpm, squirrel cage
4—100 hp. 3/60/2200/900 rpm, slip ring
2— 75 hp. 3/60/440/900 rpm, slip ring
2— 75 hp. 3/60/220/1200 rpm, squirrel cage

Fan and Press Pump motors and all other ratings in stock.

CALL ON US — DAY OR NIGHT — ANYWHERE

Complete starting equipment available for above motors.
Free rental while we repair your motors.

W. M. SMITH ELECTRIC CO.

Phone HUnter 2801 DALLAS — TEXAS — Phone 3905 HARLINGEN

GOVERNMENT type dryers delivered and erected in your gin plant. See advertisement on page 41 this issue.—Service Gin Co., P. O. Box 21, Ville Platte, La.

Equipment Wanted

WANTED TO BUY—Good used gin machinery of any kind.—Bill Smith, Abilene, Texas.

WANT TO BUY—Used tower drier and burner, oil or butane.—Farmers Warehouse and Seed Company, Locust Grove, Ga.

WANTED—4-80 all steel Continental gin stands direct connected brush with 30 fronts of the later models.—Payne Brothers, Hartselle, Ala.

Personnel Ads

HELP WANTED—Ginner for new Murray-Mitchell Supers and Super gems who can assume responsibility for operation and help. Four room modern house furnished. Year-around job. Good schools. Also four ginners for night jobs, starting September 1st. Give references.—Box 548, Artesia, New Mexico.

WANTED—Bookkeeper experienced in oil mill records and accounts for work in Louisiana.—Write Box "JCD" c/o Cotton Gin and Oil Mill Press, P. O. Box 444, Dallas, Texas.

WANTED—Ginner capable of repairing and handling Murray air blast gins, etc. Diesel engine. Immediate work.—H. W. Hillman, 213 S. Menefee, Edna, Texas.

HELP WANTED — Male — a first class ginner to operate modern Murray gin in Arkansas. Good working conditions. Details on request.—Write Box "BU" c/o The Cotton Gin and Oil Mill Press, Box 444, Dallas, Texas, giving full details as to experience.

EXPERIENCED oil mill superintendent available. Many years in the trade—will furnish complete references and qualifications upon request.—Address Box "TM," c/o The Cotton Gin and Oil Mill Press, P. O. Box 444, Dallas 1, Texas.

WANTED — Experienced repairman and ginner, must be able to repair and take care of a gin. Start immediately, give qualifications and salary expected in first letter. Steady work to right party.—Write Box "NN" c/o The Cotton Gin and Oil Mill Press, P. O. Box 444, Dallas 1, Texas.

WANTED—Job as assistant ginner or pressman. Experience and references.—T. J. Runnels, Route 1, Huntington, Texas.

DESIRABLE POSITION as executive secretary to well established cotton ginner's association available to man with necessary qualifications and faith in his ability. Some traveling necessary. Write letter giving qualifications immediately as position will be filled within 30 days. Interviews will be arranged.—J. E. Teaford, Luxora, Ark.

Power Units and Miscellaneous

FOR SALE—Two 50,000 gallon and one 30,000 gallon riveted steel 3/16 inch sides, ¼ inch bottom, and 1/8 inch conical top tanks in good condition.—Call or write Owen Killingsworth, Athens, Texas. Phone 2220.

ALL STEEL BUILDINGS for cotton industry—warehouses, cottonseed houses and gin buildings.—Marvin R. Mitchell Construction Co., 1220 Rock Island, Dallas, Texas. Phone RA-5615.

FOR SALE—New and rebuilt Minneapolis-Moline power units in stock, all sizes. Sales, parts and service, day or night.—Ft. Worth Machinery Co., 1123 East Berry, Ft. Worth, Texas.

FOR SALE—Complete set of all-steel prefabricated buildings. Cotton house and seed house. $4,000.00 f.o.b., its location, or will sell separately.—Call, wire or write Jimmy Hall, manager, Cotton & Gin Dept., Muskogee Cotton Oil Mill, Muskogee, Okla., Telephone 8118 and 8314.

FOR SALE—One 40 h.p., 220 volt, 900 r.p.m., three-phase electric motor with starter switch. One 60 h.p., 220 volt, 1800 r.p.m., three phase electric motor with starter switch. One 125 h.p., 2300 volt, 900 r.p.m., rebuilt slip ring electric motor with sliding base and starter equipment. One 30 h.p., 2300 volt, 1800 r.p.m., sliding base and starting equipment. — Bill Smith, Abilene, Texas, Box 694. Phones 4-9626 and 4-7847.

POWER—One 120 h.p. and one 80 h.p. Fairbanks-Morse, type "Y," style "VA" diesel engines, both with equipment, on foundations, in good operating order. One model RX1, 100 h.p. LeRoi power unit, gasoline engine starter, fully equipped. One 35 h.p. Minneapolis-Moline 4-cylinder power unit, steel housing, electric starting systems, etc. One 60 h.p., 2200 volt, 865 r.p.m. slip-ring motor with starting equipment. One 50 h.p. G.E., 220 volt, 1200 r.p.m. squirrel cage motor. New Buda engines available.—R. B. Strickland & Co., 13-A Hackberry St. Tel. 2-8141, Waco, Texas.

FOR SALE—14 x 20 two cylinder CGC model "C" engine in excellent condition. Has seen practically no service since being converted to model "C" and has been thoroughly overhauled including new pistons and cylinders.—H. W. Cook, Thornton, Texas.

FOR SALE—One 90 h.p. M & M Natural gas engine, can be converted to Butane gas. Also 4-70 Continental gin stands, brush type.—Sloan Gin Co., P. O. Box 368, Walnut Ridge, Ark.

FOR THE LARGEST STOCK of good, clean used gas or diesel engines in Texas, always see Stewart & Stevenson Services FIRST. Contact your nearest branch.

Experiment Station Names Plant Disease Workers

In the expansion of research on plant diseases in New Mexico, two assistants in plant pathology were recently appointed to the staff of the New Mexico Agricultural Experiment Station, R. A. Nichols, dean and director of agriculture at New Mexico A. & M. College, announced this week.

One of the men, Roy M. Nakayama, will devote most of his time at present to the study of Verticillium wilt of cotton. Richard A. Hunter will work on bacterial blight, or angular leaf spot, of cotton. Since angular leaf spot is a serious problem in the Pecos Valley, Mr. Hunter will be in that area much of the time.

Headquarters for both men will be the Plant Research Laboratory on the campus of New Mexico A. & M. College.

Articles on Salt Mixtures Are Widely Published

Articles telling how to use salt in mixtures with cottonseed meal for self-feeding cattle, so that the salt regulates the daily protein consumption, appear in current issues of *The Progressive Farmer* and *New Mexico Stockman*.

The articles are by A. L. Ward and Garlon A. Harper of the National Cottonseed Products Association's Educational Service. Information on this practice, which is increasing in popularity in many areas, was provided earlier to oil mills through an article in the March 17 issue of *The Cotton Gin and Oil Mill Press*. Reprints of the article were mailed by the Educational Service to oil mills and agricultural workers.

USDA Reorganizes BEPQ With 5 Regions

A reorganization of the regulatory and control operations and administrative functions of the Bureau of Entomology and Plant Quarantine has been announced by Secretary of Agriculture Brannan.

"Purpose of the reorganization," said Avery S. Hoyt, chief of the bureau, "is to get the most possible good from the bureau's manpower and equipment resources." This will be achieved by consolidating the direction of the bureau's regulatory and control operations and administrative functions under single administrative heads in five strategically located headquarters. These will be at Greenfield, Mass., for the Northeastern Region; Gulfport, Miss., Southeastern Region; San Antonio, Texas, Southwestern Region; Berkeley, Calif., Western Region; and Minneapolis, Minn., North Central Region.

Carolinas Ginners Plan District Meetings

Six district meetings at which ginners in North and South Carolina will hear up-to-the-minute reports from Washington on the cotton situation and discussions on machinery and other problems facing the cotton industry this year have been scheduled by the Carolinas Ginners Association, Executive Secretary Louis G. McGill has announced.

The meetings will be held as follows: June 18, Scott's Drive-In, Greenwood, S. C., 5 p.m.; June 19, American Legion Hut, Bishopville, S. C., 10 a. m.; June 19, Elks Club, Orangeburg, S. C., 5 p.m.; June 20, Country Club, Monroe, N. C., 10 a.m.; June 21, The Armory, Dunn, N. C., 10 a.m.; June 21, Overton's, Rocky Mount, N. C., 5 p.m.

Oklahoma Ginners Discuss Insect Control Methods

A series of four district meetings on cotton insect control are being held by the Oklahoma Cotton Ginners' Association in cooperation with the Oklahoma Extension Service from June 7 through June 12, J. D. Fleming, secretary-treasurer of the ginners' association, has announced.

Ginners and county agents from Haskell, LeFlore, McIntosh, Muskogee, Okfuskee, Okmulgee, Pittsburg, Sequoyah, Tulsa and Wagoner Counties met at Muskogee June 7 to coordinate their insect control programs. A meeting was held at Durant June 8 for those from Atoka, Bryan, Carter, Choctaw, Coal, Johnson, Love, McCurtain, Marshall and Pushmataha Counties.

The District Court Room in the Courthouse at Chickasha will be the setting for a meeting at 10 a.m. June 11 for Caddo, Canadian, Cleveland, Garvin, Grady, Jefferson, McClain and Stephens Counties.

Beckham, Comanche, Cotton, Custer, Greer, Harmon, Jackson, Kiowa, Tillman and Washita Counties will have a meeting at the Eugene Field School in Hobart at 10 a.m. June 12.

Texas Ginners Schedule 3 District Meetings

Three district meetings to discuss government regulations and cotton production problems have been scheduled by the Texas Cotton Ginners' Association, Jay C. Stilley, executive vice-president, has announced.

The first will be a banquet for gin owners and managers and their wives in Districts 13 and 14 at 7 p.m. June 15 at the Casa de Palmas Hotel in McAllen. Jack Lomax, San Benito, is in charge of arrangements.

Gin owners and managers of the Houston area, District 10, will meet at the Lions' Club Hall in Sugarland at 10 a.m. June 18. A barbecue will be served at 12:30 p.m., and a tour of the Imperial Sugar Co. refinery has been arranged for the afternoon. R. K. Phillips, Sugarland, is in charge of arrangements.

District 11 and 12, the Coastal Bend section, will have a meeting at Welder Park, Sinton, at 10 a.m. June 19, with a barbecue at 12:30 p.m. E. E. True, Bishop, and Henry Wunderlich, Corpus Christi, are in charge of arrangements.

Atlanta, June 20-22:

Tri-States Oil Mill Superintendents

■ **Many addresses are scheduled for annual convention at Atlanta Biltmore, but entertainment is not forgotten.**

The Tri-States Cottonseed Oil Mill Superintendents' Association will hold its annual convention in Atlanta, Ga., June 20, 21 and 22, with headquarters at the Atlanta Biltmore hotel.

Business sessions will be held in the mornings, with the afternoons free for recreation. Registration will begin at 7 a.m. June 20, and the business session will convene at 9 a.m.

• **Program for Opening Day**—Speakers at the first business session will include Ernest D. Key, president, Atlanta Belting Co., Atlanta, who will talk on the topic "Can We Handle Our Labor Relations Without Outside Assistance?"; N. Hunt Moore, president of the association, who will make his annual address; and John W. Dunning, director of research, The V. D. Anderson Co., Cleveland, Ohio, who will discuss "Solvent Extraction."

E. S. Lyle, Dyersburg, Tenn., will act as moderator at all sessions.

"Soybeans—the Feature Story," a full-color motion picture, will be shown by the National Soybean Crop Improvement Council, Decatur, Ind.

• **Second-Day Program** — Another motion picture, "Yours to Command," will open the second day's business session at 9:30 a.m. June 21. It will be shown by Russell Maas, president, Screw Conveyor Corp., Hammond, Ind.

Speakers will include Dan C. Henry, Law & Co., Atlanta, speaking on "Proper Methods of Sampling and What It Means to Us"; O. D. Easley, superintendent, Southern Cotton Oil Co., Memphis, Tenn., "Wool Press Cloth vs. Nylon Press Cloth"; Joe Brady, manager, Helena Cotton Oil Mill, Helena, Ark., "Four Years of Solvent Extraction"; and M. P. Letchworth, superintendent, Leland Oil Works, Leland, Miss., "Plant Cleanliness and Its Value."

• **Program on Final Day**—J. L. Tennent, superintendent, Refuge Cotton Oil Co., Columbus, Miss., will talk on "More Lint and Better Lint and Its Effect on Separation," at the final session June 22.

O. H. Sale, vice-president, Davidson-Kennedy Co., Atlanta, will act as chairman of a general discussion on "Processing Peanuts." Election of officers will follow the reports of committees and of the secretary-treasurer.

• **Entertainment** — A barbecue will be given at 1 p.m. June 20, at the Master Grill in North Fulton Park.

On June 21 a ladies' luncheon will be given at Hart's Peachtree at 12:30 p.m., followed by a tour of the city. Link-Belt Co. will entertain the delegates with a luncheon and tour of its plant in Atlanta.

The annual banquet and dance will be held in the Ballroom of the headquarters hotel at 7 p.m. June 21.

• **Officers** — Officers of the Tri-State Cottonseed Oil Mill Superintendents' Association are N. Hunt Moore, Wilson, Ark., president; Cecil Crawford, Clarksdale, Miss., vice-president; L. E. Roberts, Memphis, Tenn., secretary-treasurer; Jane Inez Gordon, Memphis, Tenn., corresponding secretary.

State vice-presidents are: Alabama—T. S. Pryor, Montgomery; Arkansas—H. M. Woodyard, Jr., Wilson; Florida—C. E. Dutton, Pensacola; Georgia—W. G. Fulford, Dawson; Louisiana—C. L. Williams, Alexandria; Mississippi — Martin Letchworth, Leland; Missouri — Jimmie Jones, Kennett; North Carolina—B. G. Stowe, Goldsboro; Oklahoma — M. C. Dimphl, Chickasha; South Carolina—Y. L. Copeland, Kershaw; Tennessee—O. D. Easley, Memphis; Texas—Cecil Wamble, College Station.

Oakner Heads Advertising For Colorado Company

Mervyn G. Oakner has been named advertising manager of the Chemical Corporation of Colorado, manufacturers of nationally distributed Colorado .44 insecticides, weedicides and agricultural chemicals. Mr. Oakner will work with the company's new export subsidiary, the Export Chemical Corporation of Colorado, in expanding South American markets and increasing national consumer promotion through export advertising.

CCC to Pool 1950-Crop Loan Cotton Aug. 1

USDA has announced that all 1950-crop loan cotton still under loan on Aug. 1 will be pooled on that date by the CCC for producers' accounts. Loans mature July 31.

STILL THE *Only* MOISTURE TESTER

That:

- Gives direct moisture percentage readings on a dial, instantly. No bothersome charts or mathematical calculations.
- Requires no separate taking of temperature; a built-in thermometer automatically indicates temperature.
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No other moisture tester of today possesses as many highly perfected features as the

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UNIVERSAL MOISTURE TESTER

The Universal is entirely portable, extremely easy to operate, consistently accurate, thoroughly dependable. Makes complete test in less than a minute on cotton seed, cotton seed meal, soybeans, soybean meal, grain, feed and seed.

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BURROWS EQUIPMENT COMPANY

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The 1951 Crop and the Oil Seed Processor

Just how does the outlook for this year's oil seed crop affect the oil seed processor? With the Government encouraging increased cottonseed acreage, there is some indication that the combined soybean-cottonseed acreage this year will be the biggest in history. With a normal growing season, it is predicted that the 1951 domestic oil seed crop will be the biggest ever harvested.

This does not necessarily mean a long and profitable operation for processors generally. The war and the heavy armament program, together with a more favorable world wide dollar balance and continuation of the ECA program, will tend to force seed prices upward. These same factors are tending to force labor prices upward, as well as to syphon off at least a portion of the rural labor supply normally available to the oil mill operators.

The net result to the oil mill operator generally is believed to be a more abundant supply of seed, increased seed and operating costs, increased spread between oil and meal, and possibly decreased margin for conversion of seed to oil and meal.

This situation is favorable for investment in a solvent extraction system. Such an investment reduces labor requirement, particularly if it retires a hydraulic mill—in many cases the saving in labor cost alone will justify the capital cost. At the same time, it increases oil yield by 30 to 40 pounds per ton of seed, decreases repair costs, improves yields and plant efficiency generally. The following are typical for a 200-tons-per-day plant, operated on soybeans and on cottonseed:

	Cottonseed	Soybeans
Capacity	200	200
Residual Oil	.5	.4
Solvent Loss	5 lbs./ton	6 lbs./ton
Steam	6,000 lbs./hr.	7,800 lbs./hr.
Electric Power	200 kw./hr.	225 kw./hr.
Cooling Water Make-Up	20 gpm	25 gpm
Operating Labor	2 men/shift	2 men/shift

Prompt action is required by any firm desiring a solvent plant for operation on the 1951 crop. By placing an order for a complete "turnkey" plant immediately with Chemical Plants Division, Blaw-Knox Construction Company, assigning this experienced organization the responsibility for engineering, design, procurement, and construction, a processor can have his plant in operation in a minimum of time. If expected conditions materialize, operations from this one season could assist materially in the write-off of the initial cost.

We urge you to write us at one of our offices listed in the adjoining advertisement. The opportunity for a favorable return from prompt action has seldom been better. (Adv.)

The majority of all U.S. Soybean extraction plants contracted for since 1947 were designed, built and equipped by Chemical Plants Division . . . . . .

Why? For the answer, just refer to *plant performance data.* In every instance, Blaw-Knox-built and equipped extraction plants have exceeded performance guarantees in every category . . . assuring more profit per dollar invested and per ton processed. Why settle for less? Glad to consult with you now concerning future plans.

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It marks the genuine U·S·S ARROW COTTON TIE

The "T" on the buckle of every U·S·S Arrow Cotton Tie tells you that it is the best cotton tie available. It is made of strong steel that is tough enough to withstand internal strain and external abrasion . . . and it will *not* cut through at the buckle. You can depend on it to keep bales neat, firm and compact from press to final destination. The U·S·S Arrow Cotton Tie is made in the South's largest steel mill by the world's largest producer of cotton ties.

Conveniently located warehouses in the Cotton Belt can supply the U·S·S Arrow Cotton Ties you need.

Look for the "T" on the buckle of genuine U·S·S ARROW COTTON TIES

The standard bundle of U·S·S Arrow Cotton Ties contains 30 ties, 11½ feet in length, and 30 buckles. It weighs approximately 45 pounds. Ties are 15/16" wide and approximately No. 19 gauge steel.

Special Arrow Ties, 12 feet in length, weigh about 60 pounds per bundle of 30 ties and 30 buckles. Ties are 15/16" wide and approximately No. 18 gauge steel.

High Density Compress Bands are also available 30 ties to the bundle in specified lengths, without buckles.

TENNESSEE COAL, IRON & RAILROAD COMPANY, BIRMINGHAM
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS **ARROW COTTON TIES**

UNITED STATES STEEL

Outlook for 1951:

Farmers' Net Income May Equal 1947 Record, But Will Buy Less

■ **Rising prices mean higher net income for farmers as production costs go up more slowly.**

Net income for farmers in 1951 may equal the 1947 record, but their income will not buy so much as it did four years ago and they will not get so large a share of the national income.

Realized net incomes of farm operators declined in 1948, 1949 and 1950. This year, however, they may come close to the 1947 total of 17.8 billion dollars, while nonfarm personal income (which has set a new record every year since 1940) is expected to set another record at least 25 percent higher than it was in 1947. If prices paid by farmers for commodities they use for family living remain at present levels throughout the rest of this year, a net income equal to that in 1947 would buy 12 percent less goods and services than the same income actually did buy at 1947 price levels.

• **Production Costs Rise, Also**—Farm production expenses are rising along with gross farm income to a new record high; but the percentage increase from 1950 to 1951 is expected to be almost twice as large for gross income as for expenses. Cash receipts from farm marketings, the principal element in farmers' gross income, may be up about one-fourth from the 1950 total of 27.9 billion dollars.

If growing conditions are average, the total volume of farm marketings will be larger than last year and may equal the all-time record volume of sales in 1949. But the increase in farmers' cash receipts this year will be due more to generally higher prices of farm products than to a larger volume. Prices so far in 1951 have been 20 percent higher than the average for all of 1950.

• **Cotton and Flaxseed May Lead Increased Receipts**—Cash receipts will be up considerably this year for both crops and livestock, with prospects for livestock on the whole somewhat more favorable than for crops. If the production goal for cotton is achieved, and if other crop yields are average, the total volume of crop marketings may be 10 percent larger than last year's volume. Total sales of livestock and livestock products are expected to show a smaller increase. However, the increase in average prices for 1951 over 1950 is expected to be generally somewhat larger in the livestock group.

With the possible exception of fruits and tobacco, cash receipts are likely to be substantially higher for all of the major commodity groups. For individual commodities, the largest percentage increases may be in cotton, wool and flaxseed.

• **Rising Prices Mean More Net Income**—In addition to cash receipts from marketings, farmers' gross income includes the value of home-produced food and fuel, the rental value of farm dwellings and government payments. All except government payments are likely to be higher in 1951 than in 1950; and the expected increase in total gross farm income is almost proportionate to that in cash receipts.

The total cost of farm production will probably be from 10 to 15 percent higher in 1951 than in 1950, with practically all items of expense contributing to this rise. The biggest cost increases—mostly around 10 to 20 percent—are expected in expenditures for purchased feed and livestock, hired labor, motor-vehicle operating costs, rents, short-term interest charges and in a few miscellaneous items such as ginning costs. Smaller increases of not more than 10 percent seem likely in the case of taxes, farm-mortgage interest payments, expenditures for fertilizer and charges for depreciation on farm capital.

Higher costs of production, therefore, will offset part of the expected increase in farmers' gross income for 1951; but the greater part of this increase will probably be reflected in their net income. As a result, farmers' realized net income may be up 30 percent or more from last year's postwar low of 13 billion dollars.

In a period of falling demand and generally lower prices, farmers' prices and gross incomes usually decline sooner, faster and farther than the nonfarm prices which go to make up their costs of production. Consequently, their net incomes are very sharply reduced—as in 1948 and 1949. When demand and prices generally are rising, on the other hand, the process is reversed; and farmers' net incomes may recover rapidly under those conditions—as seems likely in 1951.

1950-51 Cotton Crop In Turkey Is Larger

The 1950-51 production of cotton in Turkey has been reported at 562,000 bales (500 pounds gross weight), about 17 percent above the 480,000-bale crop of 1949-50. This increased production was due largely to an increase of 38 percent in the acreage planted to cotton, from 804,000 acres in 1949-50 to 1,108,000 acres in 1950-51. Yields declined somewhat from 287 pounds of lint cotton per acre in 1949-50 to 243 pounds per acre during the current season.

Exports during August through December 1950 amounted to 171,000 bales, as compared with 209,000 bales during the entire 1949-50 season and only 129,000 bales during 1948-49. During the current season Western Germany has been the largest export market for Turkish cotton, accounting for 86,000 bales. About 29,000 bales were exported to Italy, 17,000 bales to the United Kingdom, and substantial amounts to Czechoslovakia, Ireland and France.

Consumption in the current season is expected to be about equal to the 185,000 bales consumed in 1949-50. While the capacity of the mills has increased somewhat since the previous season, the thriving export market and high domestic price will probably prevent an increase in consumption.

The high prices received by farmers for the 1950-51 crop and the prospect of continued favorable prices during the coming season are expected to result in an increase in the 1951-52 cotton acreage by 15 to 20 percent above the 1.1 million acres planted in 1950-51. Some acreage normally planted to tobacco and cereals may be planted to cotton this year. Government goals for 1951-52 were placed at 1,236,000 acres, 12 percent above 1950-51, and production of almost 690,000 bales, about 23 percent higher than the 562,000 bales produced in the current season.

With the assistance of the government, the Turkish cotton industry is taking measures to improve the production and processing of this crop. Improved seed, which is constantly being introduced, combined with better land preparation and cultivation through the use of more machinery, and intensified control of insects should lead to increased yields. Better ginning practices and more adequate classification of cotton should improve the quality of Turkish cotton, which has tended to be rather poor.

The principal limitations on increased production in 1951-52 are a possible shortage of good seed and an inadequate supply of machinery and equipment for planting and cultivating a larger acreage.

Dominican Republic Ups Oilseed Production

The principal developments in the Dominican Republic fats and oils industry during 1950 were a moderate expansion in the production of most fats and oils products, accompanied by price rises; an expansion in the capacity for the production of edible vegetable oils; the importation of edible and inedible fats on a small scale; and a continuation of the policy of attempting to obtain self-sufficiency in fats and oils.

The 1950 peanut crop was smaller than the 1949 harvest, but large carryover stocks of uncrushed nuts permitted peanut oil production to increase in 1950 to 2,822 short tons against 2,657 in the previous year. Peanut output dropped to 19,025 tons of nuts in the shell in 1950 against 22,800 tons in 1949. The harvested area dropped to 55,063 acres from 62,536.

The peanut oil factory expects the 1951 peanut crop to total between 22,000 and 27,000 tons and hopes that by 1952 production will reach 33,000 tons, the maximum quantity that the factory can handle with its present equipment. The plant, which had four screw-type presses during 1949, purchased four more during the latter months of 1950 and is now able to crush approximately 100 tons of peanuts per day.

The 1950 harvest of coconuts totaled 15.6 million nuts compared with 19.1 million in 1949. Inasmuch as 1950 plantings of coconut trees were 75 percent greater than the previous year, it is expected that the trend of recent years toward a decline in output will soon end. Despite the smaller harvest, the quantity of coconut oil available for the domestic soap industry increased slightly to 832 tons from 702 tons a year earlier.

Prospects for 1951 indicate a consumption of edible and inedible fats and oils at approximately the 1950 level. No substantial imports of edible fats and oils will be permitted unless severe shortages develop.

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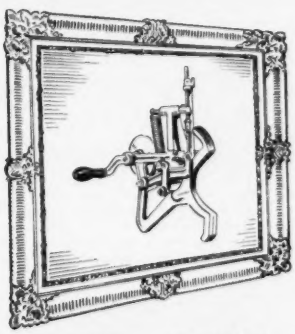
from A.A. Wood & Sons Co.



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WOOD'S LATEST
5-Head Rotary Gummer
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Duplex
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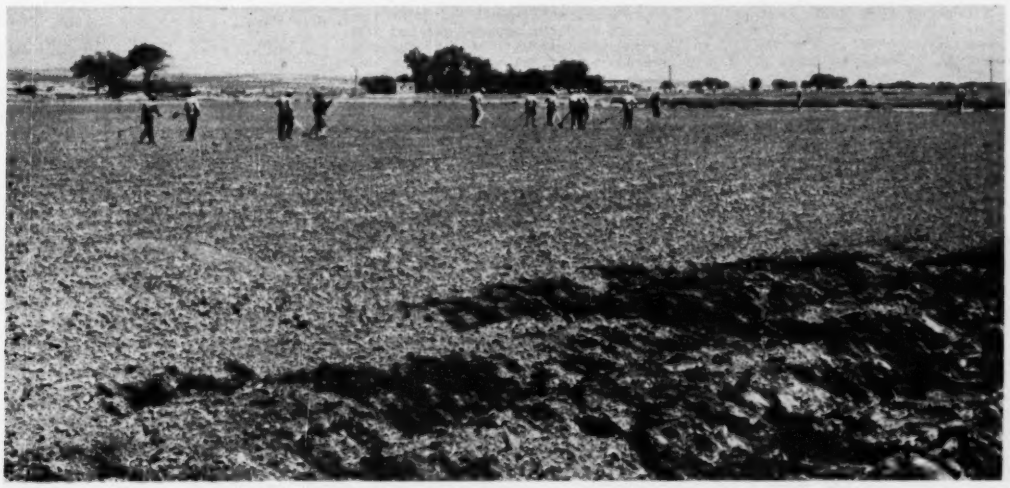
Fabulous is the word for it

NATURE denies adequate rainfall to the arid West . . . but ingenious men get water in other ways and create land so high priced that farmers can't afford NOT to grow cotton!

IN THE Pecos Valley of Texas and the El Paso Valley of Texas and New Mexico, as in other irrigated western areas of the Belt, water is the farmer's major problem. Nature is so stingy with rainfall that man has had to dig wells and impound water in reservoirs to overcome the problem. The picture below was made on the G & R Farm, near Imperial in Pecos County, Texas, in May of this year and shows a 2,900-foot-deep artesian well that flows an estimated 3,000 gallons per minute. This land was developed in the last few years and yields big crops of high quality cotton.

ANOTHER PROBLEM in the Pecos and El Paso Valleys is getting cotton up to a stand. In the Pecos Valley, farmers prefer to plant on a flat bed, as illustrated in the picture below. The soil crusts badly following irrigation, and farmers use a harrow or other tools to break the crustt so the plants can get through. Practically all of the cotton is now up to a good stand. Farmers in the El Paso Valley are fighting a growing verticillium wilt problem through breeding for resistant varieties and better cultural practices. Last year this disease reduced the yield in this area by from 15 to 20 percent.

THE PICTURE above was made in the El Paso Valley and shows cotton planted two rows to the bed, the preferred method of planting in that area. In the background can be seen raw desert land that is practically worthless. The El Paso Valley areas of Texas and New Mexico obtain most of their irrigation water from the Elephant Butte Dam in the latter state, but the water supply is low at present and farmers can obtain only limited amounts—considerably less than normal—for this year's cotton crop. An increasing number of irrigation wells are being put down to supplement the limited water supply.



THE PICTURE above, made in the El Paso Valley, shows hands hoeing cotton on some of the world's highest priced farm land. The soil is so rich that farmers are willing to spend large sums of money to clear the land of brush, level it, and take all the other steps necessary to put it in a highly productive state. The farm home pictured below, with cotton growing right up to the house, was built with "cotton money." Farm land in the El Paso Valley is now worth from $1,000 to $3,000 per acre. As one farmer puts it, "Land out here is so high-priced that we can't afford NOT to plant cotton on it."

Guatemala's Oilseed Outturn Decreases

Guatemala's production of fats and oils in 1950 is tentatively estimated at 9,030 short tons compared with 9,696 tons in 1949. The smaller production probably resulted from decreases in the output of animal fats, lard and tallow.

Prospects for future supplies of cottonseed hold the brightest spot in the local fats and oils picture. Since two-thirds of the cotton needed for domestic manufacture has been imported in recent years, the Guatemalan government is making a concerted effort to increase local output. In 1948 the Production Development Institute began to foster increased plantings. By 1950 cotton acreage reached 4,600 to 4,800 acres and an estimated 2,500 tons of cottonseed were available for crushing. In 1951, supplies for crushings may reach 4,000 tons.

Other oleaginous crops grown in Guatemala of commercial importance are sesame, peanuts, corozo kernels and the African oil palm. Production in 1950 was 1,200 tons of sesame seed, 350 tons of peanuts and 900 tons of corozo kernels.

African oil palm plantings at present consist of about 900 acres on the Pacific Coast and some 700 acres on the eastern coast. A minimum of 1,500 acres per plantation is considered necessary, however, to warrant the installation of processing equipment. Since no additional plantings were made during 1950, it is unlikely that appreciable quantities of this oil will be produced before 1956.

Guatemala in 1950 continued to import increasing quantities of fats and oils. Arrivals last year of all fat materials totaled 7,780 tons, an increase of 20 percent from 1949. As was true in past years, the bulk of these imports consisted of about 3,160 tons of lard and 3,750 tons of tallow. Most of the remaining imports were in the form of vegetable oils—635 tons—of which 370 tons were inedible. By all measurements the U.S. continued to be the principal supplier.

Oil supplies from the expanding cotton production seem to be the main prospect in the near future. Peanut plantings may continue about the same as in 1950 while the better price outlook in 1951 may increase sesame output.

U. S. Fats and Oils Exports Drop, Imports Increase

United States exports of fats and oils on an oil equivalent basis totaled 477 million pounds during the first quarter of 1951 compared with 572 million pounds during the corresponding period last year—a decrease of 16 percent.

Shipments held up fairly well in January but February and March were about one-fifth lower than 1950. Important decreases occurred in crude soybean oil, cottonseed and oil, crude peanut oil and lard. These decreases were offset in part by increased exports of soybeans and refined soybean oil, inedible tallow and other increases of lesser importance.

During the same period, imports rose sharply from 1950. On an oil equivalent basis, Jan.-March imports for 1951 were 891 million pounds compared with 273 million pounds during Jan.-March 1950. Imports thus increased 43 percent while exports were decreasing 16 percent. Import increases occurred for copra and for most oils, including babassu, castor, coconut, oiticica, olive, palm, rapeseed, tung and herring oil. Babassu kernels and castor beans were down and there was a sharp (50 percent) decrease in the general category of "all others."

The U.S. still maintained its recently (1949) acquired position as a net exporter of fats and oils but the excess of exports over imports dropped from 299 million pounds in the first three months of 1950 to 86 million pounds this year. By buying more and selling less, the U.S. is generally considered to have contributed significantly to sharply rising prices for fats and oils on the world market between early 1950 and early 1951. For this reason, importing countries are particularly concerned about the balance of net exports from this country.

Argentina Suspends Cotton Exports

The government of Argentina announced last month that exports of raw cotton were being suspended indefinitely in order to protect supplies for domestic requirements.

The 1950-51 crop now being harvested is estimated at about 500,000 bales (500 pounds gross weight), considerably below the 643,000 bales produced in 1949-50. Mill consumption in Argentina amounted to about 400,000 bales last year and may reach 425,000 in the current season.

• Production of corn in Georgia in 1950 averaged 16.5 bushels per acre, the second highest per acre yield on record.

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J. Van Rogers Is Called Back to the Service

J. Van Rogers, Southeastern field representative of the NCPA Educational Service since March, 1947, is being called into military service and is being granted a leave of absence from the Educational Service staff.

"Van," as he is widely known among his many friends in the cottonseed crushing, agricultural and livestock industries, will continue his work until he reports for active duty. He expects that this will be about July 1, and he hopes to be assigned to duties closely associated with agricultural research in the Quartermaster Corps.

J. VAN ROGERS

He is looking forward to returning to the Educational Service staff as soon as his military service is completed, and is anxious to maintain the closest possible contact with the industry during his military service.

A. L. Ward, director of the Educational Service, states that a qualified man is being sought to carry on the field work in the Southeast while Mr. Rogers is on his leave of absence. In the meantime, Mrs. Gloria M. Clack will continue the work of the Atlanta office of the Educational Service, assisting members of the cottonseed crushing industry and others. Mrs. Clack has been Mr. Rogers' secretary for the past three years.

Nicaraguan Sesame Seed Output Increases

Nicaraguan sesame seed production during the 1950-51 crop year is estimated at 6,845 short tons, an increase of 37 percent from the previous year but still far short of the record 16,700-ton harvest of 1948-49, reports to USDA indicate. Between 27,500 and 29,500 acres were planted to sesame in 1950.

Exports of sesame seed fell off sharply from the record levels obtained in 1949. According to official Nicaraguan customs figures shipments of seed totaled 8,230 tons during 1950 compared with 19,170 tons during the previous year.

According to informed sources, about 5,000 tons of the 1950-51 crop already has been sold. Since domestic consumption rarely exceeds 150 tons a year, remaining stocks of approximately 550 tons will more than meet the requirement.

Sesame is generally planted by the small farmers in Nicaragua with little capital and with little experience in large-scale mechanized activities. As a result, these farmers are not expected to succumb to the cotton-planting fever that has been sweeping the country. It is unlikely, however, that sesame production during 1951-52 will exceed that of last year.

Production of coconuts during 1950 increased considerably from 1949, mainly due to the rehabilitation of a formerly abandoned plantation. Exports totaled 537,250 nuts during the last five months of 1950 and were consigned to the U. S.

African oil palm plantings now total 1,600 acres and production is reaching commercial importance. First shipments of oil are expected some time during 1951.

Exports of flaxseed during 1950 totaled about 930 tons, with Japan taking virtually the entire quantity.

Indonesian Palm Oil Holds At 1949 Production Rate

Indonesia's production of palm oil and palm kernels during 1950, although approximately at 1949 levels, was far below earlier forecasts.

The oil palm producing area in Sumatra is now estimated at about 150,000 acres, an increase of 10 to 15 percent during the year. Production was expected to increase toward the end of the year, but labor troubles and unsettled conditions reduced the output. Palm oil output may have reached 132,000 short tons in 1950, or nearly 20 percent less than expected, and palm kernel production may have amounted to 33,000 tons, or 78 percent of the volume forecast earlier in 1950.

As a result of the various factors which lowered actual output below potential possibilities, exports of palm oil and palm kernels were, respectively, five and 16 percent below 1949. Shipment of 822 tons to the U.S. was less than one-tenth the quantity consigned to this country in 1949. Exports of palm kernels totaled 26,560 tons.

The outlook for palm oil and kernels is not bright. Labor troubles during the harvest period and the slowdown in loading after enforced termination of the harbor strike at Belawan by military authorities in November have reduced production, and carelessness and neglect have affected adversely the quality of current output so that it has not always attained recognized standards. The trade also reports concern about the long time effects of neglected weeding, trimming and other cultivation of palm groves.

Pillsbury Moves Hendrix To Minneapolis

Clyde Hendrix, corporate vice-president of Pillsbury Mills in charge of the Feed and Soy Division, is moving from Clinton, Iowa, to the firm's home office in Minneapolis, Minn., this month to head Pillsbury's entire feed operations.

D. W. Hunter, production vice-president of the Feed and Soy Division, which has headquarters at Clinton, will take over the duties handled by Mr. Hendrix there in connection with the company's oil mill operations.

Italian Oilseed Production Is Unchanged in 1950

Italian production of oilseeds in 1950 is estimated at 50,340 short tons, or about the same as in 1949 despite a nine-percent decrease in plantings. The greatest reduction in plantings occurred for sunflower seed, soybeans and castor beans. Cotton acreage, however, increased substantially in 1950 while peanut plantings remained about the same.

Although the climate and soil conditions of Italy are not well suited to growing oilseeds, plantings of edible oilseeds during the immediate postwar period rose from an average of 7,900 acres during 1936-39 to a high of 96,880 acres in 1947. By 1949, however, plantings had dropped to 63,340 acres and were reduced still further in 1950 to 51,270 acres. Peak plantings and production during 1947 were due to exceptionally high prices.

Vegetable oil production (excluding olive oil) in 1950 totaled 48,500 tons compared with approximately 57,300 tons during 1949.

During 1950, oilseed imports were 107,500 tons compared with about 101,400 tons in 1949. Although imports of edible oilseeds were 44 percent less than in 1949, inedible oilseed imports more than doubled those of last year. The greatest decline in edible oilseed imports from 1949 was in soybeans—a drop from almost 31,000 tons to only 1,430 tons. Flaxseed imports in 1950 amounted to 46,450 tons, or 57 percent of the total imports of inedible oilseeds during the year. Imports of vegetable oils declined somewhat in 1950, totaling only 77,140 tons compared with 102,810 tons in 1949.

The United States is still the most important supplier of oilseeds to Italy, accounting for 30 percent of the total in 1949 and 22 percent in 1950.

World Cattle Numbers Are on the Increase

Cattle raisers of the world had more cattle than ever before on Jan. 1, according to USDA foreign relations officials. Largest gains have been in North America, principally the U.S., and in eastern Africa.

Cattle numbers in Asia are almost up to the average before the war, but haven't changed much in the past year. Some gains have been shown in Iran, Japan and the Philippines, but about the same in China and India.

Cattle numbers in Russia are still somewhat below prewar, but the trend there is upward too. Except for the drought-stricken countries in Southeastern Europe, better pastures and feed enough these past three years have enabled about half the countries in Europe to build herds back to or above what they were before the war.

Ethiopia, the largest cattle raising country of Africa, made substantial gains in numbers in 1950. Favorable feed and forage in Australia have also boosted cattle production there above prewar.

Foot-and-mouth will limit cattle development in Colombia and Venezuela in 1951, but breeders in Argentina are rebuilding their herds. Canada's supply of feed-grains should permit expansion of herds this year. In Mexico and the U.S. numbers are already about one-fourth above prewar and further important gains are expected this year.

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HENDERSON, NORTH CAROLINA

South Africa's Oilseed Production Increases

Vegetable oilseed production in the Union of South Africa during the 1950-51 season shows a sizeable increase from last season, reports to USDA indicate.

The preliminary unofficial estimate places peanut production by Europeans at 60,000 short tons against 57,000 in 1949-50. Sunflower seed production, according to unofficial sources, is estimated at 50,000 tons compared with 35,000 last season. From the cotton crop of 15,000 bales of 500 pounds lint, about 8,000 tons of cottonseed may be obtained compared with 3,000 the past season. Tung oil production is estimated at 300 tons.

Castor beans are being grown only on a limited scale in the Transvaal and difficulties are being encountered with caterpillar damage which limits the expansion of the crop. There is no fixed price on castor beans but the demand is strong and prices are increasing rapidly.

Local consumption of edible oils is estimated at 22,000 tons per year. Estimates of edible fats range from 1,000 to 4,000 tons, soap oils 25,000 tons, and paint oils 9,500.

The Secretary of the Oil Expressers' Association indicates that a small surplus of peanut and sunflower seed oil will be available this season but the Food Control and Distribution Organization has not yet decided whether or not exports will be permitted. Cottonseed oil will be in the best supply position in many years. There will be deficiencies, however, in castor, linseed and tung oils.

Exports from the Union of South Africa during 1950 included 576 tons of sunflower seed, 599 of unshelled peanuts, 763 of shelled peanuts, 9,824 of peanut oil, 7,188 of maize and sunflower seed oil, and smaller quantities of other oil products. Imports included 991 tons of castor oil, 5,791 of coconut oil, 5,264 of linseed oil, 1,047 of flaxseed, 4,111 of palm kernel oil, 2,774 of palm oil, and other vegetable seeds and oils.

Venezuelan Fats and Oils Situation in 1950

Venezuelan production of vegetable oils in 1950 is estimated at 3,630 short tons compared with 3,940 tons in 1949.

Sesame oil production of 2,360 tons in 1950 represented an increase of almost 23 percent from the previous year. Coconut oil with 1,200 tons and cottonseed oil with 290 tons were the only other vegetable oils of commercial importance produced.

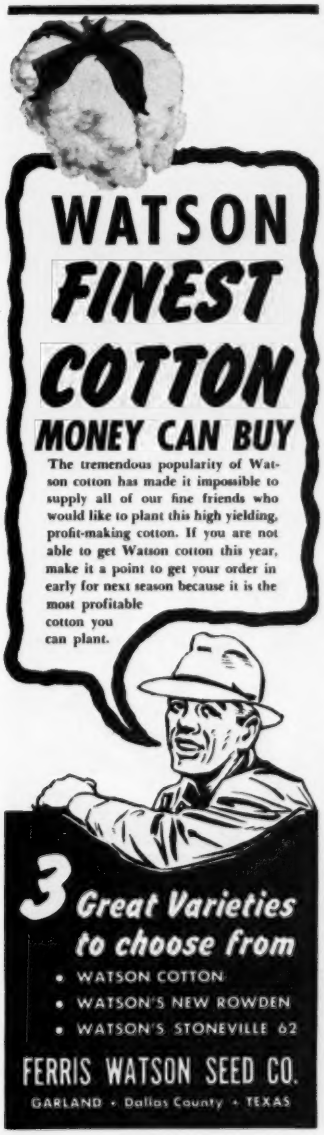
Venezuela continues to rely upon outside sources of vegetable oils and oilseeds to meet its domestic requirements and there is little evidence that this condition will change in the near future.

A major development of the Venezuelan fats and oils industry was the opening of the first margarine plant in the country. Although current production has been geared to the market, early acceptance of the product indicates that the plant may soon be operating at a capacity output of about 24 tons per 24 hours. The current pack is primarily a 50-50 cottonseed oil-coconut oil mixture, while the milk base is reconstituted from imported non-fat dried milk solids of U.S. origin.

The product, under the trade name "Mavesa" is packed to sell at a retail price of three bolivares (90 cents per pound). This is 25 percent cheaper than any other spread now available in Venezuela.

Philippines Open Trade

The Philippine government announced last month that a large number of commodities, including raw cotton, would be removed from import restrictions. It stated that the financial position of the islands has improved sufficiently to allow a freer flow of imports in order to relieve some domestic hardship.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Give Pig Chance to Make Hog of Itself

■ Summer management is major factor in swine profits, says NCPA's Educational Service.

Even a pig needs some help in order to make a hog of himself.

Good summer management helps pigs make market-topping hogs, says A. L. Ward, educational director of the National Cottonseed Products Association. Well-fed, properly managed hogs make a profit most years. Diseased or parasite-infested hogs that don't get the right care and feed are a poor bet any year.

Start with healthy pigs and keep them healthy for fast gains and efficient feed use. A sick pig is a poor producer. It takes longer to get to market and requires more feed.

Sanitation is the first requirement for disease and parasite control. Good green pasture provides cheap, nourishing feed and is the best way to maintain sanitation. Avoid stale mud wallows. Keep water and feed troughs clean and supplied with fresh water and well-balanced rations. Well-fed pigs are easiest to keep healthy.

Your county agent or agriculture teacher can show you how to worm hogs with sodium fluoride. Vaccinate for cholera if your farm or neighborhood had a recent outbreak. Consult your veterinarian immediately when diseases occur. Use the new efficient, proved insecticides to control lice, mange and flies.

Good rations make the most profit. Balance them for protein, minerals and vitamins. Feed liberally but without waste.

The noted feeding authority, F. B. Morrison, says in "Feeds and Feeding" that one pound of protein supplement will save five to six pounds of grain when used in amounts needed to balance rations for pigs.

An economical and efficient protein supplement you can mix on the farm is: 40 pounds of cottonseed meal, 40 pounds of tankage or meat meal, and 20 pounds of alfalfa leaf meal. Leave the alfalfa out of the mixture if hogs are on good pasture. This supplement may be self-fed, free choice, with grain or mixed with ground grain and self-fed or hand-fed.

Growing pigs and breeding sows need the vitamins, minerals and growth factors they get from green pasture. If pasture is not available, feed rations containing five percent alfalfa meal for fattening hogs and 10 to 15 percent alfalfa for breeding animals. A good mineral mixture to feed, free access, is two parts of bone meal and one part of salt.

Self-feeders promote fast gains and reduce labor costs. Hogging-down grain in the field is another way to save costs by reducing labor.

Fattening hogs eat more and gain faster if you keep them cool and comfortable during hot weather. The Texas Experiment Station showed that gains are increased when hogs have a concrete wallow to keep them cool. Conveniently located shade helps keep them comfortable and reduces the danger of heat losses. Construct shade so that the breeze will blow over the hogs.

Plenty of clean, fresh water is essential at all times but is especially important during hot summer months. Partially covered water troughs make it easy to keep water clean and cool.

Market hogs at 200- to 225-pound weights for most efficient gains and highest prices. After hogs reach 200 pounds, it requires an extra ¼ to ½ of a pound of feed to produce a pound of gain. A Cornbelt swine specialist has suggested that you may find it more profitable to market a ton of pork in ten skins instead of eight. — *Educational Service, National Cottonseed Products Association.*

• Farm fires strike somewhere in the U.S. every 15 minutes, snuffing out 3,500 lives annually and causing property losses of about $100,000,000.

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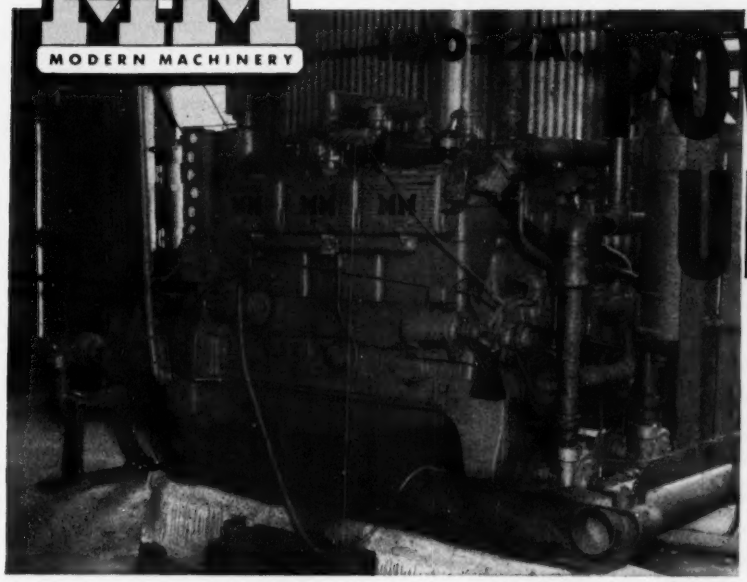

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- 1—Continental Double Box Simplex Hydraulic Press
- 1—Continental E J Mechanical Tramper
- 1—Conveyor-Distributor Elevating System
- 1—45" Suction Fan
- 1—72" Revolving Drum Separator
- 1—Pure Seed Blower with Drag Belt
- 1—Seed Scale
- 2—Roots-Connersville Pressure Blowers
- 3—72" Continental Impact Cleaners
- 2—Continental Triple Saw Burr Machines
- 2—Continental 4-Trough Driers
- 2—45" Hot Air Fans
- 1—30" Hull Fan with Intake and Discharge Pipe
- 1—35" Hull Fan with Intake and Discharge Pipe
- 1—Line of Hull and Mote Conveyors under Gins
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Two MM 1210-12A engines furnish complete power for the large modern gin plant of the Beene Planting Company at Bossier City, Louisiana.

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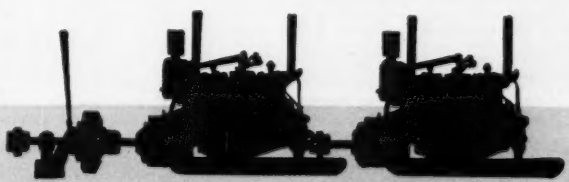
MM's high production and standardized parts make possible low cost per hp and the best in parts service. Gin operators find that by the use of the front power take-off and master clutch they can add MM single engines or convert to MM grouped engines that provide the right amount of power *at the least cost!* In addition they are able to use the lowest cost fuels available because MM 1210-12A engines are factory equipped for natural gas or LP gas. Built-in gear reductions provide choice of power shaft speeds for direct drive application to eliminate belts, pulleys, idlers, and bearings.

Plan now to see your nearby MM representative for complete facts on lowest cost per hp and a grouped engine layout to fit your floor plan.



MINNEAPOLIS-MOLINE
MINNEAPOLIS 1, MINNESOTA

Iraqi Cotton Production Increases Rapidly

The latest official estimate of the 1950-51 production of cotton in Iraq places the crop at 38,000 bales (500 pounds gross weight). This is more than four times as large as the 1949-50 crop of 8,500 bales. At the present time, the outlook for 1951-52 is for a substantially larger crop. Most estimates of its size range from 75,000 to 150,000 bales. The seed distributed for the 1951-52 crop has been reported to be about five times as much as was distributed for the crop just harvested.

The principal variety now grown in Iraq is the Acala Rogers, an American upland-type medium staple variety. Prior to 1949 both Acala Rogers and Old Acala, another American-type cotton, were grown. However, the good characteristics and acceptance by foreign buyers of the Acala Rogers variety has led the government to prohibit the growing of Old Acala since 1949. Experiments are being carried on to find the variety best suited to the climate and soil of the country. The Coker Wild variety, developed in the U.S., is favored because its earlier maturing helps reduce cotton bollworm infestation. A short staple native variety is still grown in small quantities in the unirrigated region of northern Iraq. Recent experiments have been carried out on the development of a Pakistani short staple variety to meet the need of the local industries for improved short staple cotton.

The cotton industry in the country uses short staple cotton in mattress-making, upholstering and for a local type of home-made cloth. Requirements for this type of cotton are normally met by imports of around 2,300 bales of low-grade cotton and cotton waste from India. However, with the virtual embargo on exports from India in 1950, the small cottage industry has had to obtain supplies from the small production of short staple cotton in northern Iraq.

The single consumer of better-grade cotton in the country is the Iraq Spinning and Weaving Company, which began operations in 1948. With the installation of 12,000 new spindles in the fall of 1950, the mill now has 27,000 spindles in place. Total consumption in the country during the 1949-50 season was estimated at about 4,000 bales, but this will probably increase substantially during the current season with the enlarged capacity of the local mill.

Exports of cotton during Jan. to Oct. 1950 totaled 7,500 bales, 70 percent of which was shipped to Western Germany. It was expected that exports during the entire 1950 calendar year would reach 9,200 bales.

Who's Responsible For High Prices?

Who says the farmer is responsible for high prices? Listen to this (based on last December's prices):

If the farmer gave away the wool in a $50 suit of men's clothing, the suit would still cost $40.50.

If he'd give away the wheat in a 16-cent loaf of bread, the loaf would still cost the consumer 13.4 cents.

If the dairy producer furnished the milk in a 22-cent quart of milk absolutely free, it would still cost the housewife 11.5 cents.

If the farmer would give away the beans in a 16-cent can of pork and beans, the can would still cost you 14 cents at the grocery store. —*New Mexico Extension Service.*

Norwegian Consumption of Oilseeds and Oils

Consumption of vegetable oils in Norway during 1950 is estimated at 35,500 short tons. This volume was obtained by importing 6,550 tons of vegetable oils and 92,250 tons of oilseeds. No oilseed crops are grown in Norway and in postwar years no vegetable oils have been exported.

Postwar consumption is 24 percent below 1938. This reduction is due to the greatly decreased use of vegetable oils in the production of margarine. In prewar years vegetable oils accounted for 60 percent of the fat content of margarine, while in 1950 this percentage was reduced to 34 percent. The remaining 66 percent was made up of marine oils. Of the total vegetable oils consumed, 18,650 tons consisted of coconut oil, 3,650 of peanut oil, 4,150 of soybean oil, and 9,050 of linseed oil. More than two-thirds of the total quantity consumed was utilized for food.

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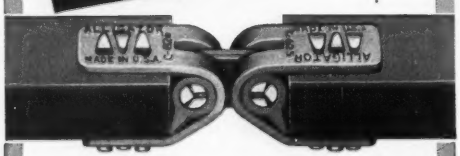

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Cuba Has Smallest Peanut Crop in Many Years

Cuban peanut production during the 1950-51 crop year was the smallest in 13 years, totaling only 5,250 short tons of unshelled peanuts compared with 8,750 tons last year and the record output of 35,500 tons in 1943-44. Of the 1950-51 crop, approximately 3,750 tons went to the crushing industry and yielded 1,050 tons of oil compared with 1,900 tons in 1949.

Commercial production of oleaginous crops in Cuba is confined almost exclusively to peanuts, although some castor beans also are grown.

Reduced plantings again were the primary reason for the low peanut harvest in 1950-51. Growers have in many instances found that they can obtain greater returns from other crops. Likewise, because of growing competition from imported vegetable oils, local peanut crushers, who supply most of the seed to farmers, have reduced operations. Frequently they have gone into the oil importing business.

Preliminary estimates indicate that fats and oils consumption during 1950 totaled about 105,000 tons, or approximately 10 to 15 percent above 1949.

There were no significant exports of fats and oils during 1950. On the contrary, Cuba was more than 90 percent dependent upon imports of these commodities. Animal fats and oils, chiefly lard and rendered pork fat (69,730 tons) and inedible tallow and grease (16,015), made up 80 percent of the imports during the year. Of the remainder, imports of 13,740 tons of edible vegetable oils were the most important and consisted chiefly of soybean oil from the U.S. and olive oil from Spain.

Higher oil prices as compared with a year ago may stimulate peanut production during 1951-52. Accordingly, local crushers are distributing more seed than last year. Assuming that there are no adverse developments during the planting season now in progress, total plantings for the summer crop may exceed 20,000 acres, as compared with about 15,000 acres last year.

Soybean Receipts in April Continue Good

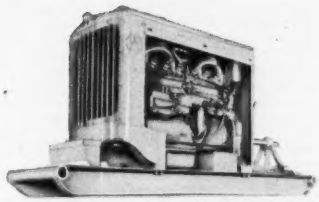
Soybeans marketed in April continued to be of good quality, according to reports to USDA. Eighty-nine percent graded No. 2 or better in March and April compared with 84 percent in April 1950 and 69 the 10-year April (1940-49) average.

April inspections totaled 6,483 cars compared with 7,508 in March and 6,298 cars in April a year ago. Inspected receipts for October through April amounted to 105,881 cars this season compared with 82,918 cars for the same months last year.

Inspections of soybeans in April included the equivalent of 370 cars inspected as cargo lots and 56 cars as truck receipts.

Philippine Copra Exports

Exports of copra and coconut oil from the Philippines during April 1951 amounted to 87,173 long tons in copra equivalent, and exceeded prior 1951 monthly shipments by a wide margin. Coconut oil totaling 6,428 tons was exported.



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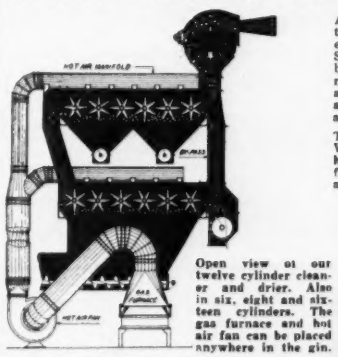

Open view of our twelve cylinder cleaner and drier. Also in six, eight and sixteen cylinders. The gas furnace and hot air fan can be placed anywhere in the gin.

A careful study of the open view cut at the left will convince any ginner of the effectiveness of the Stacy Cotton Cleaning System and Drier. Note the hot air is blown through the cotton by a series of nozzles (similar to the air blast nozzles on a gin stand), forcing the dirt, leaf trash, and stems through the screen. The moist air does not follow the cotton.

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World Report:

Peanut Production Is Below Average

World peanut production in 1950, estimated at 10.3 million short tons of nuts in the shell, is down about two percent from the postwar average and 600,000 tons below the 1949 output, according to the latest information available to USDA's Office of Foreign Agricultural Relations.

Forecasts early in the season had indicated the possibility of a record world peanut crop in 1950. As the season advanced, however, it became evident that the declining prospects in India and Africa precluded this possibility. The loss in India was particularly severe. In addition, significant declines were reported in French West Africa, Nigeria, Indonesia, Brazil and a number of minor producing countries. Some of the loss, however, was counteracted by an estimated increase in China and reported gains in the U.S. and a few minor producing countries.

• **United States**—In the U.S. farmers harvested 1,019,200 tons of peanuts from 2,315,000 acres in 1950. Final outturn of the crop—80,000 tons larger than the 1949 harvest—was greater than was expected earlier in the season but 13 percent below the record crop of 1948. Weather conditions were very favorable during the harvesting season in most areas and the crop was saved in excellent condition and with a minimum loss.

• **Central America and West Indies**—Production in Cuba and the Dominican Republic decreased around 4,000 tons each from the previous year while Mexican output increased by about 3,000 tons.

• **Asia** — Despite increased plantings, reaching 10 million acres, in India the harvest dropped to 3,200,000 tons or a loss from 1949 of more than 600,000 tons. High peanut prices provided the chief incentive to "unsystematic" sowings which resulted in larger planted and harvested area but a smaller per acre yield. Inadequate and insufficient monsoon rainfall during the period of plant growth also contributed to the decrease in the yield.

China's peanut production is believed to have been somewhat larger than the 3,224,000 tons harvested in 1949. Acreage also is believed to have been larger. General crop conditions were reported to have been very good in the important peanut producing provinces despite damage from floods, drought and insects in some areas.

Acreage decrease in Indonesia from 759,000 in 1949 to an estimated 620,000 acres in 1950 undoubtedly resulted in a sizeable drop in production last year. Increases were reported in Japan, where almost 17,000 tons were harvested against 10,000 in 1949, and in Taiwan, where the crop was 70,000 tons against 61,000 in 1949. In Thailand, however, the outturn amounted to 10,500 tons compared with almost 14,000 the year before.

• **South America** — Argentina's peanut crops the past two years have dropped to less than half the average of the previous postwar years—approximately more nearly the prewar output. The 1950 harvest yielded only 80,900 tons compared with 89,300 in 1949 and 258,000 in 1946. Drought damage has caused partial crop failures in Argentina in recent years.

Brazil reported a peanut crop of 110,000 tons, less by some 44,000 tons than 1949. For the first time in the postwar period production decreased from the previous year. Brazil produced only about 15,000 tons of peanuts in 1939. In Uruguay a decrease from the record outturn of 11,700 tons in 1949 to 4,500 in 1950 was reported.

• **Africa**—French West Africa's peanut harvest, instead of approximating the 1949 outturn as expected earlier, is estimated at 500,000 tons or 100,000 tons less than a year earlier. The reasons for the substantially diminished tonnage are believed to have been (1) the abnormally heavy rains during August and September and (2) reduced movement of African migrant farmers from the Sudan to the producing areas of Senegal. The knowledge that peanut prices for the 1950-51 harvest would not be supported by the government is believed to have been a contributing factor in keeping at home some 20,000 farmers who normally travel to Senegal for the peanut-growing season.

Nigeria's 1950 peanut harvest is estimated at around 400,000 tons or 100,000 tons less than the 1949 estimated production. Previous estimates which had indicated an almost normal crop now appear to be unfounded. Purchases by the Groundnut Marketing Board near the end of the purchasing season were reported at approximately 155,000 tons of shelled nuts (around 232,000 unshelled basis) compared with over 200,000 tons (about 300,000 unshelled) from the 1949 crop.

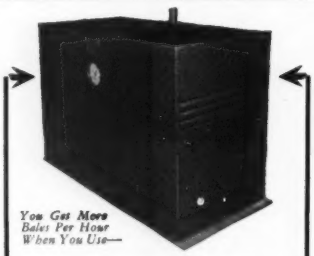
The major cause of the reduced output is believed to have been the extreme dry weather during and immediately following the planting period. In addition large quantities of peanuts are believed to have been exported across the northern border into French Niger where the buying price was about $28 per ton higher than that of the Nigerian Groundnut Marketing Board.

In the Union of South Africa peanut production decreased from 69,000 tons in 1949 to 57,000 last year.

• **Australia**—The 12,000-ton harvest in Australia was slightly higher than in the previous year.

Lebanese Vegetable Oilseed Situation for 1950

Aside from the local production of sesame seed, all of Lebanon's vegetable oil industry requirements continue to be met by imports, according to Nicola Abboud, American Legation, Beirut. These imports consist chiefly of copra, cottonseed, flaxseed, and sesame seed.



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TIMELY TIPS

On Livestock Feeding

• **Pasture Tips**—Mississippi Extension Pasture Specialist W. R. Thompson says, "Now is the time to plan for and to plant sudan and millet for temporary summer grazing." He advises that fertile land be used and that fertilization and mowing be made a part of pasture management.

Advising against overgrazing, he says, "Too much livestock on pastures results in overgrazing which will not only cause low income from pasture but will result in a poor root system and poor grazing the rest of the year."

A reserve supply of protein concentrate and some roughage such as cottonseed hulls, hay or silage will help avoid overgrazing and maintain production.

• **Plan for Roughage**—The recent adverse winter taught many Cotton Belt cattlemen they can't depend on pasture alone. A supply of roughage such as cottonseed hulls, hay or silage is money-making management. Now is the time to plan for next winter's reserve roughage supply.

Texas Extension Dairy Husbandman R. E. Burleson says, "A full silo is good feed insurance. If pastures get short or drouth strikes, silage will keep the dairy cow producing."

• **Cottonseed Meal Produces Results**—The USDA "Range and Livestock Report" for April 1, 1951 said, "Cows were coming through the winter in fair condition primarily because of heavy supplemental feeding. Because of lack of green feed, milk flow is very low unless cows receive supplemental protein feed."

The Tennessee Experiment Station reported that when silage is full fed to cows, 4½ pounds of cottonseed meal is worth more than two pounds of meal plus five pounds of alfalfa.

The New Mexico Experiment Station reported that they saved $2 per head per month on feed cost by feeding a ration of 1½ pounds of cottonseed meal, five pounds of alfalfa hay and full feeding cottonseed hulls instead of full feeding alfalfa hay.

• **The Fly Season Is Here**—The Louisiana Extension Service says that beef cattle protected from horn flies and other insects during the summer will gain an extra pound of weight a day and that dairy cattle protected from insect pests will give as much as 15 percent more milk.

• **Creep-Feeding Calves**—Georgia Extension Livestock Specialist Charles E. Bell says, "A good grain mixture for creep-feeding calves is six parts of ground corn and cob and one part of cottonseed meal."

South Carolina Experiment Station tests showed that 70 pounds of additional gain was produced by creep-feeding 494 pounds of feed. The mixture used was three parts of corn, two parts of oats and one part of cottonseed meal.

• **Feed to Fatten on Pasture**—In University of Arkansas experiments, steers netted $20 to $50 more per head when full-fed on pasture for 60 days instead of being shipped directly to market off pasture. The full-feeding period, following grazing, added weight and improved the grade, bringing a higher price per pound.

Such cattle may be hand-fed an average of two pounds of cottonseed meal and 10 to 12 pounds of ground grain, per head daily. Another good plan is to self-feed a mixture of one part of cottonseed meal, two parts of cottonseed hulls and three parts of ground grain.

• **Tips on Sheep**—Clemson College sheep specialists recommend, "Creep-feed lambs for early market. Give sheep access to salt, one part of phenothiazine to nine parts of salt. Market early lambs as soon as they reach 70 pounds in weight. Rotate pasture to prevent stomach worms."—*Educational Service, National Cottonseed Products Association.*

• Only 16 out of every 100 persons in the U.S. were farmers last year.

Honeybees Are Needed In Defense Effort

Honeybees perform an important job as gatherers of honey and pollinators of seed, fruit, and fiber crops, but they are also vital to the defense effort.

Beeswax, a byproduct of honey, is needed for coating war munitions and in the manufacture of airplanes. Not only is the wax in short supply, but no satisfactory substitute for it is known.

Bees make their comb out of beeswax. After they gorge themselves with honey, their wax glands secrete a liquid that hardens when it comes in contact with the air.

Many beekeepers save all of their precious beeswax and sell it to dealers. The price is higher now than ever before.

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Sweden's 1950 Fats, Oils Production Up 20 Percent

Sweden's production of fats and oils of vegetable and animal origin amounted to nearly 130,000 short tons in 1950, exceeding the previous year's total of 105,700 tons by over 20 percent.

Edible vegetable oil output, principally from rapeseed, was reported at 81,000 tons. Linseed oil was reported at 15,400 tons; lard, tallow and other animal fats, 20,000; fish oil, 1,650; and distilled tall oil, 11,500.

Domestic vegetable oilseed production is limited to rape, mustard and flaxseed. Rapeseed plantings on 312,600 acres yielded 116,470 tons of fall rape and 73,650 of spring rape. Oil production from rapeseed was calculated at 79,150 tons. Mustard seed output of 6,680 tons from 16,550 acres yielded 1,800 tons of oil. Sweden's flaxseed production of 44,270 tons (1,581,000 bushels) represented a decrease of almost one-fourth from the record of 1949. Flaxseed was planted to 88,000 acres and yielded 15,400 tons of linseed oil.

Consumption of fats and oils still exceeds production but the difference is small and declining. Consumption of edible fats and oils amounted to 81,500 tons during 1950 and the non-food industrial usage is estimated at from 55,000 to 65,000 tons. The supply of rapeseed oil is larger than the present demand, a fact which motivates a substantial foreign trade of oils.

Exports of fats and oils during 1950 amounted to 51,150 tons in oil equivalent and consisted of 44,737 tons of rapeseed, 56 tons (2,000 bushels) of flaxseed, 17,050 tons of rapeseed oil and 4,750 of miscellaneous vegetable fats.

Imports of 44,825 tons of copra, about half of which was supplied by British Malaya, 14,700 tons of vegetable oils, 11,100 tons of hydrogenized animal fats, and 11,450 tons of whale oil, chiefly from Norway, exceeded exports on an oil equivalent basis by about 20,000 tons.

The anticipated output of fats and oils in 1951 is 140,000 tons, or an increase of about 10,000 tons from the previous year. Rapeseed acreage was expected to be up by 46,500 acres and area sown to flaxseed has been forecast at 106,250 acres against the 88,000 acres during 1950. The expected production increase appears to be offset by correspondingly larger exports of rapeseed and oil while imports and consumption probably will remain at the 1950 level.

Spain's Vegetable Oilseed Production Again Small

Spanish production of oilseeds, other than olives, amounted to about 24,650 short tons in 1950. There is little interest in producing oilseed crops in this country and the small output was limited to 8,600 tons of cottonseed, 12,700 of peanuts, 650 of flaxseed, and 1,350 tons each of hempseed and sunflower seed.

Imports of vegetable oils and oilseeds continued comparatively small in 1950. Soybean oil imports of 13,720 tons, all from the U.S., were less by one-third than the 1949 volume. This was probably due to lack of dollar exchange and to the olive oil carry-over from the large 1949-50 crop. However, since the 1950-51 olive oil crop was only about one-half of the previous year, and exports during 1950 more than six times greater than in 1949, a shortage of edible oils has developed throughout Spain. Other vegetable oils imported consisted of 2,350 tons of palm oil, principally from Spanish Guinea, and 208 tons of other oils. Copra imports of 8,788 tons were 2,400 tons higher than in 1949, and also were supplied by Spanish Guinea.

Flaxseed and castor bean imports of 3,094 tons were purchased chiefly from India and French Morocco.

Due to rains during the winter and spring, the prospects are good in 1951 for normal olive, cottonseed, and other vegetable oilseed production. However, until these crops are harvested and processed, Spain could use considerable quantities of oil from other sources.

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CALENDAR

Conventions • Meetings • Events

• June 10-11-12 — Texas Cottonseed Crushers' Association annual convention. Shamrock Hotel, Houston, Texas. Jack Whetstone, 624 Wilson Bldg., Dallas 1, Texas, secretary.

• June 14-15 — Mississippi Cottonseed Crushers Association annual convention. Hotel Buena Vista, Biloxi, Miss. J. A. Rogers, P. O. Box 3581, West Jackson Sta., Jackson, Miss., secretary.

• June 18-19 — Joint convention Alabama-Florida Cottonseed Products Association and Georgia Cottonseed Crushers' Association. San Carlos Hotel, Pensacola, Fla. T. R. Cain, Professional Center Bldg., Montgomery 4, Ala., secretary of Alabama-Florida association; J. E. Moses, 318 Grand Theatre Bldg., Atlanta 3, secretary of Georgia association.

• June 18-19—New Mexico Cotton Ginners Association annual convention. Navajo Lodge, Ruidoso, N. M. Mrs. Flora R. Lawrence, Loving, N. M., secretary-treasurer.

• June 20-21-22 — Tri-States Cottonseed Oil Mill Superintendents' Association annual convention. Biltmore Hotel. Atlanta, Ga. L. E. Roberts, 998 Kansas, Memphis 5, Tenn., secretary-treasurer.

• July 26-27-28 — Annual Cotton Research Congress. Memorial Student Center, Texas A. & M. College, College Station. Sponsored by Statewide Cotton Committee of Texas, Burris C. Jackson, Hillsboro, chairman.

• Sept. 6-7-8—American Soybean Association annual convention. Hotel Fort Des Moines, Des Moines, Iowa. George M. Strayer, Hudson, Iowa, secretary-treasurer.

• November 8-9—Fifth Annual Beltwide Cotton Mechanization Conference, Chickasha, Okla. For information, write National Cotton Council, P. O. Box 18, Memphis 1, Tenn., sponsor of the conference.

• March 30, 1952—National Cotton Ginners' Association annual meeting. Baker Hotel, Dallas, Texas. Carl Trice Williams, P. O. Box 369, Jackson, Tenn., secretary-treasurer.

• March 31, April 1-2, 1952 — Texas Cotton Ginners' Association annual convention. Fair Park, Dallas, Texas. Jay C. Stilley, 109 North Second Ave., Dallas 1, Texas, executive vice-president. For exhibit space, write R. Haughton, President Gin Machinery & Supply Assn., Inc., P. O. Box 444, 3116 Commerce St., Dallas 1, Texas.

Garlon Harper Has Article In Tulsa Publication

A comprehensive article on good feeding practices is featured in the May "Ranch and Farm World," monthly agricultural magazine section of the Tulsa, Okla., "World."

Garlon A. Harper, assistant in nutrition for the NCPA's Educational Service in Dallas, is author of the article, which is illustrated with livestock scenes from the Educational Service files.

Proper choice and use of feeds, and the feeding of beef and dairy cattle, sheep and swine are discussed.

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Laugh It Off

The surgeon stood by the bedside and looked down at the dying man.

"I cannot hide from you the fact that you are very ill," he said. "Is there anyone you would like to see?"

"Yes, sir," said the sufferer faintly.

"Who?"

"Another doctor."

• • •

Don't let a woman boss the job;
Don't bow to her demands;
Don't be a great big sticky glob
Of putty in her hands.
Don't grovel when she loudly barks;
Don't kowtow to subdue her,
Just grin, ignoring her remarks . . .
Unless you're married to her.

• • •

Two battered old wrecks of humanity were sitting together on a bench in the city park, when one informed his neighbor, "I'm a man who never took advice from anybody."

"Shake, old fellow," said the other, "I'm a man who followed everybody's advice."

• • •

A boy scout found an envelope containing tickets. The envelope bore a name and address, and the boy, accompanied by his younger brother, went there at once.

On accepting the tickets, the rightful owner thanked the boy and offered him a dollar.

"Sorry, I'm a scout," said the boy; "this is my good deed for the day."

The man was on the point of returning the bill to his wallet when the scout went on: "But my little brother here isn't."

• • •

The visiting child psychologist was giving the teacher of the second grade some good advice.

"You don't hold the interest of your pupils, Miss Jones. When they come in, I'll prove to you that they are not paying the slightest attention to what is going on."

Presently the youngsters filed in and took their places. The visitor asked the class for a number, and a little girl gave 35. The visitor, in large, clear figures, wrote 53 on the blackboard, and asked for another number. Receiving 19, he wrote 91 on the blackboard, and for 47, 74. After several minutes of this, the visitor glanced triumphantly at Miss Jones, when suddenly a voice called out:

"Sixty-six. Let's see what you can do with that."

• • •

A patron wearing a hearing aid entered a cab and the driver remarked, "Those things any good?" Patron replied, "I would be lost without it." "Must be tough to be hard of hearing," sympathized the cabbie, "but nearly all of us have something the matter one way or another. Take me, for instance, I can hardly see!"

• • •

A very thin man met a very fat man in the hotel lobby.

"From the looks of you," said the fat man, "there might have been a famine."

"Yes," was the reply, "and from the looks of you, you might have caused it."

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J. D. BELL
Mitchell Representative for
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Johnny Bell has probably one of the "cleanest" backgrounds of any Mitchell employee for, before joining the Company in May of 1943, he owned and operated his own cleaning and pressing establishment. Born in Dallas in 1915, Bell was raised and educated there.

After association with the Mitchell Company in 1943, he worked at various jobs . . . unloading steel, operating a punch press, serving as a maintenance man at the plant, working in the shipping department and the experimental department. After this background at the home factory, Johnny served the Mitchell Company in various capacities on the road for about three years before being assigned a permanent territory.

Now residing at 121 Calvin Street in Ruston, Louisiana, J. D. Bell can be reached in Ruston at telephone 372.

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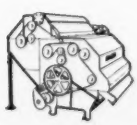

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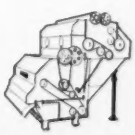

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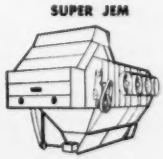
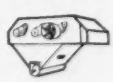
3-CYLINDER SUPER JEM

DISTRIBUTOR



JEMBO UNIT

SUPER CHIEF



AFTER CLEANER

2M HEATER

JOHN E. MITCHELL COMPANY

3800 COMMERCE STREET DALLAS, TEXAS

Manufacturers of Fine Machinery for more than Forty-Five Years

HARDWICKE-ETTER COMPANY

Field Tested

90 Saw Split Rib Gin

with

Positive Vacuum Moting System

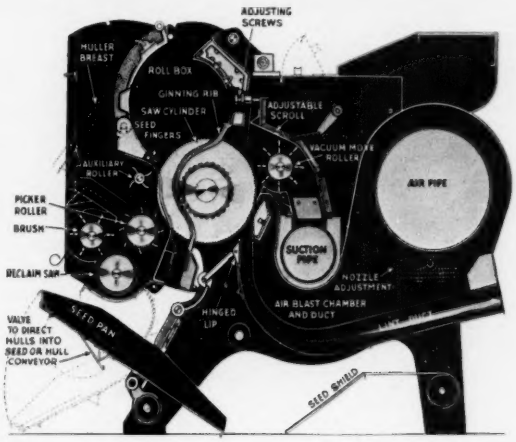
and

Reclaimer Saw

for

Greater Capacity,

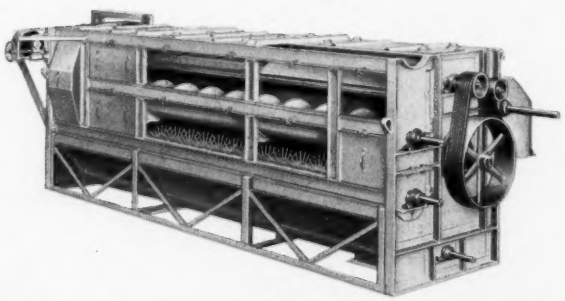
Smoother Sample



HARDWICKE-ETTER COMPANY

MANUFACTURERS **Sherman, Texas**

New Big Bur Extractor



EXTRACTION FULL LENGTH OF SAW CYLINDER

Trash discharge or Moting Space extends FULL LENGTH directly under Saw Cylinder. This feature eliminates Cylinder dragging through accumulated trash at this point, and affords maximum capacity without loss of cotton.

Write for Bulletin No. 34-A

THE MURRAY COMPANY OF TEXAS INC.

DALLAS • MEMPHIS • ATLANTA